



# JOURNAL

*of the*  
**Association of American  
 Medical Colleges**

Volume 18

NOVEMBER, 1943

Number 6

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**A Full Vocabulary of Medical Terminology**

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Published bimonthly, January, March, May, July, September and November, at 5 South Wabash Avenue, Chicago 3, Illinois, by the Association of American Medical Colleges. Subscription price \$1.00 per year. Single copies, 75 cents.

Entered as second class matter January 17, 1930, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879.

(Continuing the Bulletin of the Association of American Medical Colleges)

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**Accomplishment of the Freshmen Attending the 1942-1943  
Session in the Medical Schools of the United States**

Fifteenth Study

FRED C. ZAPFFE

Secretary, Association of American Medical Colleges  
Chicago, Illinois

This study has been made each year since 1928. The purpose is to give information, not otherwise available, to colleges, universities and medical schools. Medical schools use it as an aid in the selection of students. They receive a complete report on the accomplishment of the students of every college and university represented in the freshman group. From time to time, a composite report is prepared covering, usually, a period of five and ten years.

Each college and university represented in this student body receives a report on the accomplishment of its students which has proven helpful in revising courses if the report shows evidences of poor scholarship in the medical school. Then, too, the information is used for the preparation of the Student Register maintained by the Association. This Register consists of a card for every medical student in all the medical schools showing his scholastic record and other information about his education, where it was secured and the duration, his age and other items of importance in maintaining such a register. When the student enters on his internship, the card is removed from the file. It is an educational, not a biographical record.

This report is limited, in the main, to the freshmen, but it also gives summarized data on sophomores, juniors and seniors. The detailed information for all classes is found in the Student Register and is available to anyone who desires it. It is used frequently and extensively by various organizations.

It may be confusing to some to find that the figures given in this report are at variance with those published elsewhere. That is not an error. Some published figures are based on early reports received from medical schools; others are based on incomplete information given at a time when complete information is not yet available. For instance: For each session, medical schools send an enrollment blank for each new matriculate to this office. But often they do not report the repeaters because blanks for these students were sent for preceding sessions. Then, too, some students matriculate after the beginning of the

session. They are not reported on until after the close of the session. Some students drop out shortly after matriculation and are not reported on at the end of the year. Thus, there are many reasons for discrepancies in published figures.

This report is based on data furnished by medical schools at the end of the session. Therefore, the number of students reported is always larger than is shown by reports received at the beginning of the session. The number of freshmen reported represents the number of students who were in actual attendance for the whole or a major part of the session. Each figure represents a name which has a card in the Student Register. For the freshman class reported on in this study, 6,339 enrollment blanks were received. I predicted that the actual number of freshmen would be about 6,500. It actually was 6,502. Not a bad guess! The additional 163 students represent repeaters not included in the enrollment blanks and students who had withdrawn in preceding years for reasons other than failing scholarship and who reentered a medical school in 1942 and, hence, were not reported as new matriculants. Students who withdraw because of illness, lack of finances or some other reason not related to scholarship are not counted as repeaters.

#### COLLEGE DATA

As stated above, there were 6,502 freshmen, an increase of 82 students over 1941, 441 over 1940. These students came from 578 colleges and universities (569 in 1941, 557 in 1940). Seventy-eight (78) of these colleges were not approved by an accepted accrediting agency but inasmuch as the students from these colleges are received with full credit by the university of the state in which the college is situated, the member colleges of the Association of American Medical Colleges are permitted to accept them. From these 78 colleges came 192 students (206 in 1941; 173 in 1940). Elsewhere (Table 4) is shown the accomplishment of these students. It does not compare favorably with the accomplishment of the students from approved colleges. However, the fact that students from nonapproved colleges are accepted by the medical schools is evidence that any promising student is given a chance to prove himself worthy.

The medical colleges make every effort to accept a promising student. Various aids to selection are used, such as the standing on the medical aptitude test sponsored by the Association, college record, psychological tests of various kinds and personal interviews. It has often been said, erroneously, that only 20 per cent of all applicants are accepted. The studies made by the Association since 1926 prove that this is not true. Usually from 53 to 65 per cent of applicants are accepted. The one exception was in 1941 when only 48 per cent were accepted. But there was a good reason. The number of applicants for that year had increased by almost 20 per cent. Many of the applicants were not prepared sufficiently to be acceptable. Then, too, many accepted students, usually about 10 per cent, fail to enter medical college in that year for one reason or another. Often an applicant wishes to find out whether he would be accepted but really is not ready to enter medical school not having completed his preparatory education.

## ACCOMPLISHMENT OF THE FRESHMEN

Table 1 presents the data on the accomplishment of the 6,502 freshmen. It should be studied carefully. It shows not only the accomplishment of the class as a whole, but it is broken down into the accomplishment of "Own" students, those students who entered the medical school of the university in which they prepared for the study of medicine and "Other" students, those students who attended other medical schools than the one of their own university. The table also shows the records of students with varying degrees of preparation—those who attended college only two years or more, but less than three years; those who attended three years or more but less than four years; those who attended

TABLE 1. ACCOMPLISHMENT OF ALL FRESHMEN STUDENTS BY "OWN" AND "OTHER" GROUPS AND BOTH GROUPS

Promed. Prepara- tion	"Own"—2488, 87.5%					"Others"—4064, 62.5%					"Own" and "Others"—6502					Totals No. %
	Cl.	Enc.	Out	W.	Totals	Cl.	Enc.	Out	W.	Totals	Cl.	Enc.	Out	W.	Totals	
	%	%	%	%	No. %	%	%	%	%	No. %	%	%	%	%	No. %	
2 yrs.	86.9	2.6	7.8	2.6	38 1.5	76.2	8.5	13.6	1.7	59 1.5	80.4	6.2	11.3	2.1	97 1.5	
3 yrs.	89.7	5.1	4.1	1.0	1386 56.9	84.4	7.1	6.9	1.6	1193 29.3	87.3	6.0	5.4	1.3	2579 39.7	
4 yrs.	78.0	11.9	8.9	1.4	143 5.8	71.5	11.8	14.0	2.7	186 4.6	74.5	11.8	11.6	2.1	329 5.0	
A.B.	87.0	5.8	5.2	1.9	533 21.8	83.7	8.9	5.5	1.9	1421 35.0	84.7	8.0	5.4	1.9	1954 30.0	
B.S.	78.9	11.8	7.7	1.5	338 13.9	79.4	9.3	7.5	3.7	1205 30.0	79.3	9.9	7.6	3.2	1543 23.8	
Total	86.9	6.5	6.2	1.3	2488 37.5	82.0	8.6	7.0	2.3	4064 62.5	83.9	7.8	6.3	1.9	6502	

four or more years but did not receive a degree; those who received a degree, an A.B., a B.S., or more than one degree. Although the students who held more than one degree are included in table 1, their accomplishment is shown in another table (Table 3) for purpose of comparison.

Taking the class as a whole: For the past three years, the accomplishment of the freshmen has improved over preceding years. For many years from 13 to 15 per cent of freshmen were not promoted. Many failed outright. A few withdrew—some because of failing scholarship. With better selection, the percentage of failures became less. The headings in table 1 call for explanation for purpose of orientation and understanding. Under the column "Clear" are those students who had an entirely clear record without subject conditions or failures. Under "encumbered" are listed the students who had subject conditions or failures, or both, or who did not complete their work before the end of the session but who made up this deficiency later. Students with subject conditions and failures usually remove these during the summer (before acceleration) at their own or some other medical school. In the column headed "Out" are listed the students who failed of promotion—who failed, were dropped, who were given the privilege to repeat the year and those who withdrew because of failing scholarship or who were advised to withdraw because of poor or failing scholarship. Under the column headed "W." (withdrew) are listed the students who withdrew because of illness, lack of finances, "did not like medicine" (there are quite a few in this group) and for whose withdrawal no reason was given either by the student or by the college. Perhaps, it is safe to assume that many, if not all, in this latter group withdrew because they found that they could not make the grade.

In 1942, 83.9 per cent of the students had a clear record as against 81.2 per cent in 1941. Only 7.8 per cent had an encumbered record, as against 9.4 per cent in 1941; 6.3 per cent failed of promotion, as against 7.0 per cent in 1941; 1.9 per cent withdrew, as against 2.4 per cent in 1941. May this improvement in accomplishment be charged to better selection of students by the medical schools? I believe that that is true. Medical schools have improved in their selection of students. A very great aid, I believe, has been the reports made to medical schools since 1928 on the accomplishment of all students. Any source college whose record during these years has not been good, finds that its students have difficulty in being admitted to a medical school. Why take a chance with these applicants when so many deserving students are seeking admission? The desire to study medicine does not necessarily imply an aptitude for medicine. The fact that parents want their son or daughter to study medicine does not necessarily imply that the offspring is fitted for medicine. There are, doubtless, many such instances. I base that thought on statements made to me by such unfortunates.

Comparing the accomplishment of "Own" and "Other" students, one finds considerable variation. That fact can, perhaps, be explained easily. It is easier for a medical school to pass judgment on an applicant coming from its university than on an applicant from another university. All the information needed to evaluate the student, his scholarship, his personality, his aptitude, is easily available when he is one of their own. His professors can be interviewed, which, often, is very helpful in selection. Naturally, a medical school will select only the best of its own university students. Those not accepted are compelled to go elsewhere. No doubt, some very good students prefer not to attend their own university medical school. Some may be refused admission on the basis that they are not citizens of the state in which the college is situated. More and more, the state university medical schools restrict their student body to residents of their state. If they cannot fill their quota, they will accept nonresidents. Quality, not residence, determines acceptance. Hence, there are vacancies.

Table 1 shows that there is a difference in the accomplishment of "own" and "other" students all the way. The "own" students have more clear records, fewer encumbered records, fewer failures of promotion and withdrawals than the "other" students. In fact, the difference is very much of a difference. That proves that better opportunities for selecting students make for better selection and better records. There is less of taking a chance or working in the dark against unknown factors. Not only is there this difference in the total groups, but it is also present in each sector of each group representing different degrees of preparation for medicine.

Always there are more students with only three years of college work in the "own" group than in the "others" group. That is, of course, easily understood. Schools know more about their own students at the end of three years than they know about students from elsewhere. That also accounts for the fact that more degree holding students are in the "others" group than in the "own"

group. Many schools feel that they are taking less of a chance accepting a degree holder than they are with the non-degree holder.

Only 1.5 per cent of all students had less than three years of college work. Many came from junior colleges. The number in this group has been growing smaller year by year. There were more three year students in 1942 (39.7 per cent) than in 1941 (33.5 per cent). The percentage of four years or more students (no degree) was about the same—5.0 per cent in 1942; 4.9 per cent in 1941. The percentage of degree holding students in 1942 was 53.8 per cent; in 1941, 59.9 per cent. At graduation, these percentages will be higher because many students receive a bachelor's degree after the completion of the first year of medicine.

What should be the preparation for the study of medicine has always been the subject of much discussion. For many years, ever since its inception, there has been only one medical school (Johns Hopkins) which maintained the bachelor's degree for admission. A number of schools gave preference to the degree. The majority of schools have a three years of college requirement for admission. A few schools hold to the minimum of two years of college work. (For the duration of the war, the Army Specialized Training program has set 60 hours of college work as the admission standard. That standard did not apply to the 1942 class.) Many medical educators favor the three year standard; some the degree standard; a few prefer only two years of college work.

It is interesting in this connection to compare the accomplishment of the students who had only two years of college work with those who had three or more years. Table 1 shows that the two year students did not do as well in 1942 as they did in preceding years, although among the "own" group they ranked third in clear records and had the fewest encumbered records. But they ranked high in failures and withdrawals. In failures, only the four years group did worse. The three years group among the "own" students made the best record all the way. The A.B. group came second. The B.S. group, as always, shows up rather badly. It had fewer clear records than any group, except the four years group; more encumbered records than any group, except the four years group; more failures than any group, except the two years group. The totals for the "own" group were: clear, 86.9 per cent (83.9 in 1941); encumbered, 6.5 per cent (8.7 in 1941); failed of promotion, 5.2 per cent (5.3 in 1941); withdrew, 1.3 per cent (2.1 in 1941). The total of failed and withdrew for this group was 6.5 per cent (7.4 in 1941), which is a very creditable showing.

In the "others" group, the three year men had the largest number of clear records (84.4%); with the A.B. group a close second (83.7%). The B.S. group was third (79.4%), the two years group fourth (76.2%) and the four years group fifth (71.5%). The four years group had the largest number of encumbered records (11.8%); the B.S. group was second (9.3%); the A.B. group third (8.9%); the two years group fourth (8.5%); the three years group fifth (7.1%). The A.B. group had the fewest failures (5.5%); second, the three



years group (6.9%); third, the B.S. group (7.5%); fourth, the two years group (13.6%); fifth, the four years group (14.0%). The B.S. group had the largest number of withdrawals (3.7%); second, the four years group (2.7%); third, the A.B. group (1.9%); fourth, the two years group (1.7%); fifth, the three years group (1.6%). Whether these figures have any relation to the degree of preparation cannot be stated definitely. Ninety-seven B.S. students withdrew: illness, 48; finances, 7; reason not stated, 42. In the "own" group there were 32 withdrawals: Illness, 18; finances, 1; reason not stated, 13. Only 1.5 per cent of "own" students withdrew; 3.7 per cent of "other" students withdrew. These figures may be accepted as proof that the four or more years student is definitely a "bad bet." His course in college may have been disorientated; not aiming at anything in particular; a sort of "playboy" existence. Some of these students have been in college, fully registered, as long as ten years, yet did not get a degree. In the "own" group, 10.3 per cent either failed or withdrew; in the "other" group, 16.7 per cent. The total for both groups is 13.7 per cent. The entire four years group represents only 329 students.

#### THE WOMEN STUDENTS

Table 2 presents the accomplishment of the women students. There were 330 women in the 1942 freshman class (1941: 351; 1940: 330). They, too, show considerable improvement over the 1941 class of women. They compare

TABLE 2. ACCOMPLISHMENT OF WOMEN STUDENTS (330)

Preparation	Clear	Encumbered	Out	Withdrew	No.	Totals %
2 years	100.0	-----	-----	----	1	0.2
3 years	85.3	6.3	6.3	2.1	95	29.0
4 years	83.3	-----	16.7	----	12	3.6
A.B.	88.9	4.2	2.8	4.2	150	45.4
B.S.	69.5	16.6	6.9	6.9	72	21.8
Totals	275—83.5%	24—7.0%	18—5.5%	13—4.0%	330	

Clear: A.B., M.S.—2; A.B., A.M.—7; A.B., A.M., Ph.D.—3; B.S., M.S.—6; B.S., M.A., Ph.D.—1.  
Failed: A.B., B.S.—1.

favorably with the class as a whole, except that more women withdrew than did men. Illness accounted for eight of the thirteen withdrawals; only one woman withdrew because of insufficient finances and four gave no reason. Twenty women held multiple degrees. Only one of that number failed.

The record made by those women who held a B.S. degree is deplorable. Only 69.5 per cent came through with a clear record, almost 20 per cent fewer than among the A.B. holding group. There must be something in the course taken by students which leads to the B.S. degree that militates against doing well in medical school. General educators claim that there is little difference in the two courses, but year after year students with a B.S. degree have done badly as compared with the other students.



## MULTIPLE DEGREE HOLDERS

Table 3 shows how those students who had more than one degree fared. Among some admission committees there has been an unwillingness to give preference to an applicant holding more than one degree. This study has shown that there may be justification for that attitude, but the record of this group in the 1942-1943 class definitely refutes that attitude. In 1941 there were 120 students

TABLE 3. ACCOMPLISHMENT OF STUDENTS HOLDING MULTIPLE DEGREES (151)

Degrees	Clear	Encumbered	Out	Withdrawn	Totals
A.B., A.M.	89		2		41
A.B., B.S.	4		1		5
A.B., M.S.	15			1	16
A.B., B.S., M.S.	1				1
A.B., A.M., Ph.D.	23				23
A.B., M.S., Ph.D.	1				1
A.B., B.S., M.S., Ph.D.	1				1
B.S., M.S.	37	2	2	2	43
B.S., A.M.	6				6
B.S., M.S., Ph.D.	11				11
B.S., A.M., Ph.D.	3				3
Totals	141	2	5	3	151
	93.4%	1.4%	3.3%	1.9%	

with multiple degrees. Only 76.6 per cent came through with a clear record and 10.0 per cent failed of promotion. In the 1942-1943 class there were 151 multiple degree holders and 93.4 per cent came through with a clear record as against 83.9 per cent for the class as a whole! And only 3.3 per cent failed of promotion! In the 1941-1942 class, 8.4 per cent had conditions and failures or both; in the 1942-1943 class only 1.4 per cent were in that group. This difference in accomplishment is difficult of explanation.

## STUDENTS FROM NONAPPROVED COLLEGES

Table 4 shows the accomplishment of the students who came from non-approved colleges. Many of these colleges are junior colleges. Perhaps that may

TABLE 4. ACCOMPLISHMENT OF STUDENTS FROM NONAPPROVED COLLEGES (192)

Preparation	Clear	Encumbered	Out	Withdrawn	No.	Totals	%
2 years	86.6	-----	13.2	-----	15	7.8	
3 years	83.8	4.4	10.3	1.5	68	35.4	
4 years	28.6	14.3	42.8	14.3	7	3.6	
A.B.	79.5	10.2	10.2	-----	39	20.3	
B.S.	71.4	6.4	12.5	8.5	63	32.8	
Totals	148—77.0%	12—6.3%	24—12.5%	8—4.2%	192		

account for the record made by this group. It is not good; far below the record made by the class as a whole. Year by year medical colleges are accepting fewer students from these colleges. Their record justifies that action. Especially notable is the large percentage of failures, 12.5 per cent, twice as many as for the class as a whole. To this must be added the number of withdrawals, 4.2 per cent.

For the whole class this percentage was 1.9. The record for 1941—and for preceding years—was as bad. This should be a deterrent to accepting students from these schools without the greatest care in evaluating not only the students' records but also their personality and aptitude for medicine. Not to accept any of these students would be unfair to at least three-fourths of the entire group. With the crowding—one may say over-crowding—in medical schools today, places in the student body are definitely at a premium. Doubtless some students from approved schools are refused admission who may make a better record than

TABLE 5. ACCOMPLISHMENT OF REPEATERS (145)

Preparation	Clear	Encumbered	Out	Withdrew	No.	Totals %
2 years	83.3	8.3	8.3	—	12	8.4
3 years	72.6	7.8	13.7	5.9	51	35.1
4 years	54.5	9.1	36.4	—	11	7.6
A.B.	79.5	5.1	10.2	5.1	39	26.9
B.S.	68.7	9.4	18.7	3.2	32	22.0
Totals	106—73.1%	11—7.6%	22—15.2%	6—4.1%	145	

Clear: B.S., A.M.—1; B.S., M.S.—10.

many of the students coming from nonapproved schools. When a real error proof method of selecting students is worked out, the results will be better than they are today. Until we have that method, we must continue to do the best we can—as we are doing now.

#### THE REPEATERS

It is becoming increasingly difficult for a student who has failed to secure an opportunity to repeat. About 25 per cent are given another chance but their record is not comparable with that of the class as a whole. In 1942, there were 145 repeaters (151 in 1941). Forty-four of that number repeated in the college attended previously and were "own" students, representing about one-third of those in that group who had failed. Most medical schools take the attitude that

TABLE 6. ACCOMPLISHMENT OF SOPHOMORES, JUNIORS AND SENIORS

Class	Total No.	Clear %	Encumbered %	Out %	Withdrew %
Sophomores	5896	84.8	11.1	3.5	0.6
Juniors	5437	90.1	8.8	0.6	0.5
Seniors	5134	97.7	1.6	0.4	0.3

Women: Freshmen, 330; sophomore, 306; junior, 266; senior, 244.

Total for all years, 1146.

if the school in which the failure was incurred does not give the student a chance to repeat, they will not do so. True, occasionally, a school is asked to accept a repeater with the assurance that if he makes good, the college in which he failed will accept him for the next class. Environment may account for some failures. Many years ago these students were termed "lame ducks." The repeater is a problem. In any event, before a repeater is given another chance, every cir-

cumstance connected with his failure should be reviewed carefully. If another chance is deserved, it should be given. It is curious that among the 145 repeaters there were ten who held the degrees of B.S., M.S. They made good this time.

#### ACCOMPLISHMENT OF SOPHOMORES, JUNIORS AND SENIORS

Table 6 shows how the sophomores, juniors and seniors fared by way of accomplishment. There is improvement, although slight, over the preceding year. Adding the 6,502 freshmen to the rolls of the remaining three classes, the total of all medical students whose accomplishment was reported on by the medical colleges of the United States is 22,969.

Referring to table 7, it will be seen that somewhat more than 500 fewer students are reported for each of the upper three classes than were enrolled for the same group in the freshman year. However, it must be pointed out that there are always accretions to each of these classes, partly by repeaters and, partly,

TABLE 7. DATA ON MATRICULANTS IN SOPHOMORE, JUNIOR AND SENIOR CLASSES COMPARED WITH ORIGINAL FRESHMAN CLASS

Year	Freshmen	Sophomore	Junior	Senior
1939	5871	91.5	88.8	87.0
1940	5961	93.3	91.0	.....
1941	6420	91.0	.....	.....
1942	6502	.....	.....	.....

by those who have been out of college for one or more years. Among the graduates of 1941 was one man who graduated 20 years after having begun the study of medicine. The so-called "dead" file maintained in the office of the Association, a file which contains the cards of all students who began but did not finish the study of medicine, shows that, approximately, 25 per cent of all matriculants do not graduate. This file was begun in 1932 and is complete for all graduates since 1936. The graduates of 1943 did not all begin the study of medicine in 1939. The data on graduates are published in the JOURNAL as soon as complete information is received. These facts are stressed at this time because they explain discrepancies in published figures. For every card in the "Student Register" maintained by the Association of American Medical Colleges there is a student attending a medical school. When he ceases to be a student, his card is removed, but not until his class has graduated. Therefore, a count of these cards gives the exact number of medical students attending the medical colleges of the United States, approved and nonapproved, with few exceptions in the latter category—schools which do not cooperate in the studies made by the Association. However, any information they could give would not alter the figures given above very much.

I express grateful appreciation to all the medical schools who have helped to make this study possible.

## The Training of a Physician\*

ROY W. SCOTT

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In seeking a subject for my remarks to you on this occasion, I first thought, quite naturally, of the one uppermost in all our minds—the war and its effects in the immediate future upon your training as well as upon your era as practitioners of Medicine. There are those who proclaim that the present conflict will end soon and if this, as we hope, be true, such plans as you may have for future training will be little affected, whereas, if several years elapse before hostilities cease, many unpredictable adjustments—professional, social, and economic, will be necessary. Whenever these changes occur, you will find satisfaction in the fact that you have finished the first important lap in your training—that you now belong to an ancient guild, whose creed, if honestly pursued, affords more security, and at least as much opportunity, as any life work, to develop one's faculties and to render service to one's fellowmen.

My reflections on your present and future led me inevitably into your background. A generation has past—exactly thirty years—since I stood on the threshold where you now stand. During this period, brief though it seems to me now, I have observed certain trends in the teaching and practice of medicine which have affected you as students, and will I am sure, continue to affect you as practitioners.

My concern today, therefore, is with those changes in the medical scene which have passed under my own eye, and their influence upon the career you have chosen. Appraising critically your four-year medical course—has it been perfect? Certainly not, nor will any future course be, so long as progress in medicine continues. As Galsworthy once said: "The status quo is of all things most likely to depart, the Millenium, of all things, least likely to arrive."

The training you have received differs in no fundamental way from that given to students in other first-rate medical schools in this country at present, so that such shortcomings as there are must be ascribed to defects in the system as a whole. You must be aware that no profession has been more alert—more critical of its educational standards than has the medical profession in the past forty years. As a result, marked and rapid changes have occurred, and no one can gainsay that progress has been made. However, in most reform movements, conscientious zealots cause the pendulum to swing a little wide. That such a situation developed in the field of Medical Education is evident to many informed observers.

Let us review the factors which have influenced the policies of our medical schools during the past thirty or forty years, as here must lie the explanation of such strength or weakness as their present-day curricula exhibit.

\* Address to the Graduating Class of the School of Medicine, Western Reserve University, February 26, 1943.

Beginning at about the first of this century, we find a few schools—our own among the earliest—which raised entrance requirements from a high school education to two or more years of college preparatory work. Patterned largely after the German System founded by Johannes Müller, our basic science or preclinical departments were established. Well equipped laboratories of physiology, biochemistry, pathology, and pharmacology, manned by full-time teachers, came to be recognized as essential in a first-rate medical school, and there can be no question that the training received by the medical student was steadily improved. The expansion in the first two years of the medical course greatly increased the cost of medical education; indeed it advanced to the point where many medical schools in America unable to meet the requirements established by the American Medical Association and other organizations, closed their doors, and good riddance.

When I entered medicine in 1909 the reformation in the preclinical years was well under way, and the decade following saw a great expansion in personnel and facilities made possible by greatly increased budgets. Closely following this commendable change there arose what, in my opinion, was a fundamental error—namely, divorcing medical training from medical practice. Laboratory men trained as scientists and thus interested primarily in research, came to dominate medical faculties. Although often with little interest and certainly with no experience in medical practice, they headed important committees of the faculty which determined present and future policies of the medical school. Under these circumstances it was inevitable that the reformation which had developed in the preclinical years would sooner or later spread to the clinical departments and so it has in many of our medical schools. Pointing with just pride to the results attained by giving the student a more adequate training in the basic medical sciences, our laboratory colleagues argued that the instruction in the clinical years should become more scientific—that the more training a student received as a scientist, the better doctor he would make. This idea so influenced some medical faculties that important clinical chairs were often filled, not by seasoned clinicians, but by young men whose training had been primarily in the laboratory. Their qualifications to head a department of medicine or surgery were determined not by the clinical members of the faculty, but by the laboratory men. Philanthropists among our industrial tycoons, impressed by the great advances and benefits that had come from the introduction of science into medicine, contributed millions for the support of research. Heavily endowed foundations were established, and these were controlled by a small group of scientists—men of high repute whose opinions carried great weight, and who for several years directed to a large extent the whole course of medical education.

Medical schools and palatial university hospitals were constructed, endowments swelled, even to the point that a few schools were able to adopt the so-called full time plan in the clinical departments. University trustees observed that the easy way to enlist financial support for their medical schools was to point to the research output of the faculty members. Naturally, when it came time to fill an important chair in the school, the candidate was judged by his list of publications rather than by his interest in the field of clinical practice. More and

more attention was paid to scientific research, and I have known some scientists on medical faculties to whom the lowly medical student was but a necessary evil. In this situation the tail is clearly wagging the dog.

Please don't mistake me, I am not decrying medical research. I spent three years in physiology myself; I know something of the technique of the laboratory and I am aware of the importance of significant contributions to medicine. Furthermore, I believe also that what we may call the scientific attitude which is given the student in his preclinical years should not be allowed to atrophy later on. I decry simply, overemphasis on this aspect by clinical teachers whose interests are chiefly those of medical research and whose experience has been in the laboratory and not in the wards. After twenty-five years of teaching and with ample opportunity to observe many former students at the bedside of their patients, I am convinced that a man may be a good clinician—indeed a great one—without having done original laboratory investigation. He may also be a great clinical teacher. Such a person was the late Dr. Carl A. Hamann.

It does not follow that a student who exhibits no particular aptitude for the technique of medical research will not make a good physician or surgeon, provided, of course, that he has adequate clinical training. Unfortunately, this fact is often lost sight of, and to those of you who at times have been discouraged by your poor showing as scientists, I would say, take heart; there is hope ahead if you choose to make the effort in the field of clinical medicine. Although great scientists rarely have been good clinicians, and great clinicians have rarely made outstanding contributions to science, medical faculties too often rate both students and teachers primarily on their interest in the research field. Academic promotions for younger men in the clinical fields are not always made on the basis of the years they have spent in training, or on their ability as clinical teachers to train sound practitioners. Unless they are able to submit a lengthy list of their publications—the longer the better—the road to academic advancement is usually blocked. Little or no recognition is given to the time and energy that a young man may spend to become a skillful physician or surgeon, and because he has not published during this period a long list of papers, many medical faculties are inclined to underestimate his contribution as a clinical teacher. His own classmate who enters the laboratory and does research work soon mounts the academic ladder; he attains professorial rank and becomes a voting member of the faculty, while our clinical brother struggles on as an instructor. In so far as this policy prevails in the selection and promotion of men in the clinical departments, the medical student suffers. He is deprived of the type of instruction that is most important on the firing line of practice, and since this is where the vast majority of students ultimately find themselves, it is incumbent upon those of us who train doctors, to make every effort to see that their medical course really prepares them to practice medicine. In our zeal to pursue science let us not lose sight of our major objective. I think that most of you will agree that, equipped with some pedagogic talent, the best teacher of practical matters is the one who has experienced what he teaches. Yet in our present system of medical education, students receive much of their instruction from teachers who have had no experience with



the life he is to lead as a practitioner. As the result, much of his time and energy is spent in acquiring information that is of little use to him in his profession, while much of the knowledge that he will later find essential has never been given him. To be sure the deficiencies in the present system are often compensated for by several years of training in a good hospital. More than one sound and successful doctor, in view of his experience in practice, could suggest changes in the medical school curriculum, but his advice in such matters is rarely sought and more rarely taken. Who is to evaluate a student's course of instruction—men who have had no experience in practice or those who have achieved success in the field for which the school is supposed to train the students?

That scientific research should be supported is obvious if we are to progress; but the acclaim it has received in the past has led some medical educators to regard a medical school as a place to do research work and to train scientists, whereas, it exists primarily to train students for the practice of medicine, a viewpoint entirely supported by the fact that the overwhelming majority of its product enter some field of clinical practice. To illustrate the emphasis or overemphasis that has come to be placed on research in the present day training of a doctor, let me say that a young man who may have finished two or three years of hospital work and who desires to continue his clinical training, will find no financial support except the pittance as a hospital resident, but let him have a problem however remote from practical medicine, so long as it smacks of science, and he will find several foundations willing to aid him.

With the veneration accorded research in the past and the zeal of the public to afford its financial support, it is not surprising that the less spectacular but equally important field of clinical teaching and practice should have been neglected by those who have been accorded authority in the field of medical education. Such wrongs are often righted by time, and already there are signs in the offing that the reformation movement has reached its peak and the pendulum is gradually swinging back. Accelerating this trend will be the adjustments made necessary by the war and not the least of these will be a financial one.

Now that medical philanthropy is waning and bids fair to disappear altogether, privately endowed schools already are faced with a real problem, which may prove to be a blessing in disguise. Instead of going all out for research, they may find that on a considerably reduced budget they can train as good if not better doctors, and still have enough to support such men as are by nature and training, equipped to make a significant contribution to science. If forced to make the adjustments which appear imminent, the medical faculty will change somewhat its complexion, the opinions of its experienced clinicians will carry more weight in determining its policies, a more realistic conception of its function will develop, which I believe will result in a better equipped doctor than the present system is producing.

Thus I have given you my opinion of a rather widespread disease, its etiology, diagnosis and therapy. I am quite aware that some of my colleagues, both here and elsewhere, will assert that I have made a wrong diagnosis of the case. How-

ever, there are others who would agree. Of these, I will mention but one, a man endowed with unusual ability as a clinician and as a teacher, the late Dr. Francis W. Peabody of Boston, who on several occasions some twenty years ago expressed to me his great concern over the direction that clinical teaching appeared to be taking, particularly regarding the so-called full time plan as applied to the clinical departments in some of our medical schools. Unfortunately, you have not had sufficient experience to judge, but I would be interested to have your opinion after a few years in practice. If you agree with the diagnosis, as many who have preceded you do, then the therapeutic management of the case seems a simple matter, but not until you have attempted to treat the disease will you appreciate how refractory it really is.

On a few occasions in the past and in the face of considerable opposition, I have been in a position to help administer treatment. The ultimate therapeutic results have seemed satisfactory, so I am led to believe that perhaps the original diagnosis was correct. As you know, the prognosis is always the most difficult aspect of a disease, and what the ultimate prognosis of your affliction may be is uncertain, but as the disease becomes more generally recognized and adequate therapeutic measures are applied by men with the courage of their convictions, the malady may entirely disappear in the not too far distant future.

Now for a few remarks on another aspect of the medical scene which has appeared in my generation and which will continue in yours. It is destined to exert more and more influence on your work as doctors, as well as your status as citizens. I refer to the change in the age structure of the population. Only a few figures will be necessary to illustrate the point. In 1900 one of every twenty people in America was sixty years old or older; in 1930, one of every twelve; by 1960, there will be one in every six or one-sixth of the total population will be sixty years old or more. The unusual increase in the elderly is far greater than most of us realize. For example, the total population of this country increased 7.2 per cent in the decade between 1930-1940, whereas, those 65 years or older increased 35 per cent in the same interval. Here is something new under the sun; the greatest change of the sort that has ever affected civilization, and war, by destroying youth, can only exacerbate the problem. In the past there have been proportionate changes from war and disease, but the result was from loss, not saving, of life.

Now we are witnessing the conquest of most of the infectious diseases that cut short the lives of our progenitors; tuberculosis, captain of the men of death in 1900 is now down to seventh place as a cause of death; typhoid fever—a common disease in my student days, is now so rare we have difficulty in locating a case to demonstrate to students. Smallpox, scarlet fever, diphtheria are no longer the scourges they once were. Scientific infant feeding has saved millions of babies. Also increasing the life span are the major therapeutic advances made in the past generation. I refer to insulin for diabetes, liver for pernicious anemia, the sulpha drugs for infections and collapse therapy for tuberculosis. The advances in the field of clinical surgery have greatly lowered the mortality rate

from operations. In a word, modern medicine has made it possible for more people to mature and pass the threshold of 50 years than the world has even seen. The implications of this fact, which is without precedent, are too numerous to consider here. You, in your generation even more than I in mine, will deal with those afflictions characteristic of the later decades of life. If you practice internal medicine, you will see more and more patients dealing with the problem of cardiovascular disease; if you practice surgery, you will see more and more cases of cancer.

The population trend will not only affect your daily work; it will also make an increasing dent in your pocketbook. The mounting tax burden for the care of the aged may cause you to reflect and conclude that the increased life span, so loudly acclaimed as the wonderful accomplishment of modern medical science, is after all a mixed blessing. I will cite no more figures to prove the point, but the economic burden of chronic physical and mental illness among the old is already huge and growing greater. Already a few farsighted economists and sociologists have called attention to the mounting financial burden of the care of the aged and have warned that unless some solution is found, it may prove too heavy for our existing social structure. As our profession is responsible for the apparent boon of the lengthened life span, so we must assume a major part of the obligation to see that it does not become a curse. If we fail, we may face indictment on the charge of having created a social Frankenstein, and some future Moliere will have a field day.

Now, on behalf of the Faculty, I bid the Class of 1943 Farewell and God-speed. You blossom as our century plant, the fruit of our labors of 100 years. Of your heritage you may be proud; it contains many illustrious names in medicine. As you continue to grow, you will find that the foundation which we have helped you build rests for the most part on bedrock. It will, I am sure, adequately sustain such superstructure as your industry and ability may erect.

## Case History of One Medical Class at the University of Illinois

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What happens to a class of freshman medical students who so hopefully enroll in the College of Medicine? The following statements tell, in brief, what became of a complete class which entered the University of Illinois College of Medicine in September, 1939.

In that class there were 156 men and 13 women, a total of 169. Since nine of these were repeating the first year because of previous unsatisfactory work, this report will concern itself primarily with the 160 new matriculants (148 men and 12 women).

TABLE 1.—STATUS OF THE 160 (1939) FRESHMEN AFTER FOUR YEARS IN MEDICAL STUDY

	Men	Women	Total	%
Received M.D. degree in four years.....	107	8	115	71.88
Still in Medical School after four years.....	30	3	33	20.62
Out of school because of poor grades.....	3	1	4	2.5
Out of school because of poor health.....	1	0	1	0.62
Out of school because of finances.....	4	0	4	2.5
Out of school because of lost interest.....	2	0	2	1.25
Out of school because of army commission.....	1	0	1	0.62
Total .....	148	12	160	

The 33 students still in school but not able to graduate in four years lost time for the following reasons:

Health conditions, 6	Failed Senior Comprehensive, 2
Financial problems, 4	Failed Sophomore Comprehensive, 7
Held back a year because of excess D grades by end of the second year, 7	
Held back a year because of low first year grades, 7	

It will be seen from Table 1 that 72 per cent of this class actually graduated on schedule, with about 20 per cent still working toward their degrees. Of the 33 students still in school, one or two may drop out, but there is a possibility that this loss will be balanced by the return of some of the group which is not now in school. It thus appears that only 8 per cent of the total class will fail to achieve its goal, i.e. an M.D. degree.

Of the 9 students who were also in this class and who were repeaters, 5 graduated on schedule, 2 are still in school having lost more time because of low grades, 1 was dropped permanently for low grades and 1 left because of complete loss of hearing. These students had not earned satisfactory grades during their first year and had been required to repeat the entire year's study.

Table 2 presents data showing the sources of the 33 students who received M.D.'s with this class who did not enroll for the first time as freshmen in September, 1939.

A comparison of the data of Tables 1 and 2 leads to the conclusion that there is a fairly constant shifting back of a small group of students—a few because of health difficulties, about the same number to earn money and approximately 10 per cent of the entire group because of scholastic weaknesses. Consequently, each year the graduating class totals about 90 per cent of the number who enrolled four years previously.

It is of interest to note that of the 33 students included in the study who had been dropped for poor work and later reinstated, only 2 were again dismissed for poor scholarship.

The records of women in medical school are often the subject of special scrutiny. In this study we find of 12 young women registering as freshmen, 8 graduated on schedule, 3 were continuing their studies and 1 had failed. The three who were behind schedule had all had scholastic difficulties but appeared to be making satisfactory progress when the study was made.

TABLE 2.—SOURCES OF THE 33 STUDENTS WHO GRADUATED IN THE SPRING OF 1948 WHO DID NOT FIRST REGISTER IN THE FALL OF 1939

	Men	Women	Total
Transferred from other Medical Colleges.....	8	2	10
Lost time through earning money.....	5	0	5
Lost time because of ill health.....	2	0	2
Lost time because of low grades.....	11	0	11
Started in 1939 but had previously spent time in this school.....	5	0	5
Total .....	31	2	33

Of the 115 students who graduated on schedule, only one was married when he registered, but 43 entered the state of matrimony before receiving their degrees. There were seven married students in the entering class and only one graduated in four years.

In the beginning class of 160 there were seven doctors' sons and six ministers' sons. One of the doctor's sons failed completely, was reinstated and given a second chance and failed again. The other six graduated on schedule. None of the ministers' children failed as badly as the M.D.'s boy, but one decided he was not interested in medicine and quit early in his first year. Another student lost one year because of scholastic difficulties but will probably have no further troubles. One out of each group rated the A.O.A. Honorary Fraternity. Apparently, the doctors' children were a little more consistent in their work but, as a group, they ranked little, if any better, than those who came from the ministers' families.

Outside employment can hardly be blamed for the difficulties of the students who did poorly. A comparison of the employment records of those who had scholastic troubles with the records of the A.O.A. (honorary scholastic fraternity), which in this class included the 19 highest ranking students, shows a considerably higher percentage of self support among the latter than among the former group. One can probably infer that, for the able man, the necessity of earning a fair share of his way acts as a spur to get the most out of every opportunity; while for the mediocre man, outside employment becomes a handy alibi for every difficulty and that, oftentimes, he would be experiencing those difficulties even though his every want were supplied.



A study of the ages of the 160 students included in the study shows that they ranged from 18 to 34 years with the median 21.7. The median age of those who had no scholastic troubles was 21.6, of those who had scholastic difficulties it was 22.1, while of the 19 A.O.A.'s it was 21.2. Apparently, there is a small element in favor of the younger person. It is worth noting that both the youngest and the oldest student in the class were elected to A.O.A.

The correlation between premedical grades and grades earned in the medical school has approximated 0.55 for a number of years. However, to clarify this number somewhat, a comparison was made of the 27 who had definite scholastic difficulties with the 19 who were elected to A.O.A. The average of all the premedical grades of the 27 in the poor group was 3.71<sup>1</sup> while that of the A.O.A. group was 4.36. The premedical averages of the poorer students ranged from 3.50 to 4.30 but 14 or more than one-half of the group had averages below 3.70. The 4 who were denied further registration because of scholarship had a combined premedical average of 3.55. Two of the A.O.A.'s had mediocre premedical records but came from universities usually rated very strong in premedical preparation; the remaining 17 ranged from 4.11 to 5.00. All of which serves to emphasize the point which most educators recognize: that, now and then, a man with a mediocre record, with proper motivation, develops into a real student; and a man with an excellent record can easily fall down in grades for a variety of reasons.

The University of Illinois has never required the medical aptitude test of its applicants but a fair proportion of the students take the test anyhow. Correlation figures have never been as high as between the premedical college grades and the medical record. A comparison of the A.O.A. students and the group with grade troubles showed that 10 of the 19 A.O.A. students had taken the test and 13 of the poorer group had done so. Two of the A.O.A. students had percentiles below 50, the lowest being 34, and 7 were above 80. Ten of the poorer group were below 50, while the highest score was 70. There is clearly a relationship, but the overlapping is too great for the comfort of anyone relying wholly on the test. The fact that 8 of the A.O.A. students stood higher than the very highest of the poor group indicates that the very good aptitude score has a direct relationship to the ability to earn good grades in medical school.

This report is not presented in any effort to prove anything but rather to show what happens to an ordinary medical school class. That the data show that women do about as well as men, that the younger students tend to do slightly better than the older, that students who excel in premedical study tend to excel in medical school are all to be expected. Hence, the most outstanding conclusion is that a very large proportion of those students who enroll in medical study eventually succeed in graduating. Severe competition for places in each entering class enables the Committee on Admissions to select students who have the ability and the purpose to complete the course in large numbers.

1. For about twelve years, the University of Illinois has had an absolute minimum average grade requirement for consideration for admission to the College of Medicine of 3.5, i.e. halfway between a B and C on the University's grading scale of A equals 5, B equals 4, C equals 3 and D (passing) equals 2.



## The Effect of Specialization on the Education of the Medical Student\*

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We are living in an era of specialization. Nowhere is this more evident than in medicine. The general practitioner is fast becoming a revered memory. Some time ago, a physician entered a particular specialty only after years of general practice. This tendency has gradually changed, and now he prepares for a specialty immediately after the internship by means of a residency, graduate courses and fellowship.

The next logical step is now with us. Many medical students know or think they know which specialty they intend to practice. Some make the fateful decision before entering medical school, while some are more conservative and wait until their second or third year. This early consciousness of specialization has a powerful effect on the individual's medical education.

Those of us who are in close contact with the student and have his confidence hear the following plaint: "I am going to be a surgeon, I don't have to know much medicine." Another will say, "I am going to be an obstetrician. What good is pediatrics to me?" These are only two of the many combinations which may present themselves.

Motive supplies the energy necessary to acts of behavior. Motivation, then, is the foundation of all learning. There must be a purpose for which the medical students learn. They want to learn that which will be useful to them in their future work. A man who intends to specialize learns best that which he believes is requisite to the particular specialty. There is even unconscious rejection of other subject matter.

Of course, we can apply artificial motivation. The student may fear failing in an examination,—that is, he fears the punishment of repeating the course or of receiving a poor grade. The student, again, may wish to learn to please an instructor. The rewards of good grades or prizes furnish additional motives for learning. All of these, however, are only minor factors when compared to the great learning for use.

We cannot turn back the clock. Specialization is here to stay. What can we do?

Before the instructor can help the student he must help himself. He must be "sold" on the unity of medicine. We tend to forget that all the fields of medicine are interrelated and none can stand alone. We are even guilty of emphasizing our particular subject and placing all other subjects on a lower level. The feeling between departments should be cooperative rather than antagonistic. Such an attitude could not fail to have a profound effect on the student.

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The time to begin stressing the unity of medicine is on the very first day of college. Most medical schools have an orientation period of freshmen. The student must be impressed with the fact that each course in the curriculum is an integral part of the whole. This is a sharp change from their undergraduate days where each subject is treated as an isolated entity. There is little correlation between French III and Sociology I. In medical school, preclinical courses are not only related to each other but are an important part of the clinical courses. Anatomy, pathology and physiology are not only related to each other but are important parts of such courses as medicine, gynecology and ophthalmology. This orientation toward the entire curriculum should be followed by an orientation at the beginning of each particular subject. The integral place of a subject in the general scheme of things must be made clear, and stressed not only once but over and over again. Medicine can be a strong and beautiful edifice if it is built strongly and according to plan on solid bricks with fine mortar, or it can consist of a number of scattered and isolated outhouses.

We cannot change the student's desire for specialization. Perhaps, we do not even want to do that. We would like to postpone his choice of a specialty as long as possible. Preferably, the student should be encouraged to wait until after his rotating internship before deciding on a specialty or on general practice. As the years go on, we shall consider the general practitioner a specialist who is becoming so rare only because his is the most difficult and sacrificing job to perform. The choice of a particular specialty should be based principally on aptitude and liking. A student does not know what he can do best until he has done everything. An intelligent student very often changes his mind about a specialty many times during student and intern days. The better the different courses are taught, the more difficult will be the student's decision, for he will like each course.

His choice of specialty should not be based on family pressure, glamor, or desire for money. If one's father is an orthopedist, this does not necessarily mean that one would not do a better job in another field. Surgery and surgical specialties have been glamorized because of the excitement and action which are always found in the operating room. The drama in the other branches of medicine must be demonstrated to the student. A desire for money is, of course, a poor basis for choice of a specialty. The results are usually lack of satisfaction in one's work and unhappiness.

Sometimes a student's choice of specialty cannot be postponed. Then his own wants, needs and desires must be utilized to create new needs. For example, a student may want to be a surgeon and not see of what use a knowledge of rheumatic fever will be to him. If we begin by showing him how the abdominal pain in rheumatic fever is often confused with acute appendicitis, the student's interest may be aroused. His need will be satisfied, and he will learn well because it is purposeful. But it is not always so easy to tie a subject into the student's particular interest. Often the instructor's ingenuity is taxed beyond his ability to deliver.

In addition to motivation, the instructor should use the other principles of teaching and learning which have been established by long experience and observation. The course must be planned well. It should be integrated into the whole of medicine. The order and sequence of subjects is arranged logically and not haphazardly. The objectives are always presented clearly. These are adult men and women and they want to know the "why" and the "wherefore." Their learning is guided by purpose.

The instructor should be democratic, stimulating and sympathetic. It is only by being democratic that the student's cooperation can be obtained. The most student activity is obtained when he is given a part in organization and management of the course. It is better to stimulate the student than to dictate to him. One can stimulate not only through use of knowledge but through personality. The sympathetic instructor is in tune with the student. He knows his needs and when an encouraging word will help. He can be firm when necessary.

The student's past experience must be taken into account and difficulties diagnosed and remedied. We want to know the individual student. His strong points are used to aid his learning. His weak points sometimes can be remedied. For example, if he has difficulty in expressing his thoughts, we can help him with special training. If a difficulty cannot be remedied, it can, at least, be minimized. We should spend as much time as possible with the dull students, although they are more difficult to teach. The final aim is to make the student more and more independent of the teacher, thus enabling him to cope with his own problems and situations.

The ideal of good teaching is to develop independence in thinking, initiative and self reliance in the student. The problems he will meet in medicine are not stereotyped and he will not always have the teacher's guidance. The understanding and use of the principles of teaching and learning enable one to handle the student who is "bitten" by specialization. The problem of this individual's complete medical education cannot always be solved in one way but it can be solved in some way.

In conclusion, the student's decision to specialize in one branch will handicap his ability to learn in the other branches of medicine. The unity of medicine must be stressed throughout the curriculum. The student's choice of specialization should be postponed as long as possible. Once chosen, it cannot be fought, but must be used to create a need for all the related fields of medicine. The instructor who has not only a special knowledge in his particular field, but also a thorough familiarity with related fields, and an understanding of the fundamental aims of education, will be able to do this.

## The Social Aspects of Medicine

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The aim of medical education is frequently said to be the training of the ideal physician. It is difficult to define such an individual. If we stand on the record and our present approach, we must assume that the ideal doctor is one who is trained, as well as our facilities allow, to understand the etiology, pathology, diagnosis, treatment and prognosis of organic disease. Like many others, it is my belief that a portion of the spotlight should be shifted from this conventional method and focused to some extent, at least, on subjects concerned with the social aspects of medicine.

For the past seventy-five years, there has been a universal interest in medicine. For the first time since 1775, the American people may have an opportunity to choose between two different systems. Since the time of Bismarck in Germany, in the 1870's, socialized medicine has invaded successfully about forty countries and it has never been relinquished by any of them. In checking over the *Index Medicus*, I found that there were 572 articles listed under the subjects "socialized" or "state" medicine between the years 1918 and 1942. These have been published in reputable medical journals of all nations and their texts vary extremely in their emotionalistic and rationalistic content. Within our country, every state medical journal has at one time or another presented papers on this subject. Not only medical men have been interested but also laymen, the latter possibly to a greater degree. In the course of the past twenty years, many general articles have been written in lay periodicals; and numerous books have been published. Most high school and college debating societies have likewise chosen affirmative and negative sides. This evolution and widespread discussion of medicine is significant.

On examination of many articles, it appears that the commonest criticism leveled against the United States medical profession, as it is constituted today, is that its members are unacquainted with the social aspects of medicine. This passivity, if it is such, may possibly be traced, by some, to the traditional policies and curricula of our medical schools. The individuals comprising the profession are the products, medically speaking, of our medical institutions. They are probably the best trained physicians in the world on all phases of organic disease. If we continue to concentrate on this aspect of medicine and ignore preventive and social medicine, then the odds may be against our making real progress against sickness. Health ramifies into all phases of every day life, therefore, the practice of medicine has sociological implications. Probably the chief cause of disease is poverty which produces slums, malnutrition, prostitution, alcoholism and crime. Regardless of the medical system used, if this aspect of modern civilization continues to exist, medicine may fail to advance to its full potentialities.

There are certain to be new demands made on medicine. We have already been studied extensively by a select group of non-medical statisticians who have collected a huge mass of evidence which, on the surface, appears to be against us. These accumulated findings undoubtedly have had considerable to do with the introduction of new social medical legislation which is now pending in congress. Furthermore, the national public has become acutely conscious over the question of distribution of physicians because of the war emergency. We are living in a belligerent world in which wars have become global and total. The number of mental and physical rejects by the army and navy services may be publicized producing more of a reaction against us. The pendulum is swinging from isolationism to internationalism in this country. In order to maintain more successfully our nation, it seems imperative that we think in terms of health for all our people rather than on organic disease alone, which means curative medicine and salvaging of the wrecks. This may be the true humanitarian approach. The evolution of society is, wholly or in part, always toward more and more security. Medicine cannot be dissociated from this perpetual trend. What the people desire is important because they usually get what they want, either rapidly or slowly, depending on unpredictable factors; but mass psychology and propaganda may influence them.

Some state legislative bodies have lately become more interested in medical matters and particularly in the distribution of physicians because of the demands of certain elements of the lay population. If we analyze this question of distribution, which may soon become a major issue, it can be seen that the state bears the main cost of the student's medical education in tax supported institutions. They do this without having any assurance that the graduates will remain within the political confines of the state. Even though qualified natives only may be accepted, she takes a gamble by allowing free choice of location after graduation. There are twelve states (Arizona, Delaware, Florida, Idaho, Maine, Montana, New Jersey, New Mexico, Nevada, Rhode Island, Washington and Wyoming) which do not have a medical school. These states are fortunate in obtaining physicians free of cost to their taxpayers and at a time when the doctor may be at the beginning of his productive life. The number of physicians per capita in the states will depend largely on the individual economic condition and urbanization. Those states which have the poorest economics will have the greatest emigration and an unfavorable distribution regardless of the number of medical schools in the state. Because of this migration factor, the cost of medical education is increased for the states least able to afford it. It would appear, therefore, that one approach to the problem of distribution would be to support and cooperate with those state agencies striving to improve their economic and sociologic conditions. The alternative may well be artificial attempts to alleviate the situation by minor or major forms of socialized medicine.

There is a saying to the effect that any organization that is constantly on the defensive is on the way out. If we are to survive as an integrated, standardized body, we may have to shift from a defensive to an offensive program. This might be concerned with the training of the social as well as the scientific phy-

sician. If this is done at all, it would be performed best in medical schools. If poverty, which is a social and economic phenomenon, looms large as a cause of disease, then we cannot neglect it medically. Working with those who are attempting to eradicate unemployment, which will undoubtedly continue to be a national problem after the war, studying the living and working conditions of the people with low incomes, encouraging group practice, and putting the main emphasis on prevention rather than cure is thought by many to be a possible approach. Social research and medical statistics done by medical teachers and members of the profession are bound to show that the problems of health are intricate and that we are largely not responsible for the overall situation. A course in medical sociology, stressing the relation of medicine to society and society to medicine, may be an important course in the medical curriculum. Bardeen<sup>1</sup> advocated this step eighteen years ago. This would not establish a precedent. Recently, a chair of sociology was instituted at the medical school of Oxford University in England and such chairs existed at the Universities of Bonn and Frankfurt several decades ago. There will be those who claim that our curriculum is already too crowded; but if we do not immediately take steps to train students in this aspect of medicine, it seems strongly possible that control of medicine will pass ultimately from the hands of the medical profession on to the laity and politicians. A big step has already been taken in that direction because the laymen are looking at the matter from the social viewpoint; whereas, medical men are thinking in terms of organic disease.

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## A Foundation for the Adequate Distribution of Postwar Medical Care

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### INTRODUCTION

Except for the verbosity involved in such a title, this paper might better have been titled "A Plan for Laying the Foundation for Attainment of Medicine's Goal in Rural as Well as Urban Areas." It makes the following assumptions:

1. Although a universally satisfactory definition of "adequately distributed medical care" has not been forthcoming to date, it will include the provision of modern medical services to the rural population at reasonable cost, and with a minimum of inconvenience to the patients involved.

2. Not the least problem is the provision of X-ray, laboratory, optometry and anaesthesia facilities within the reach of that 40 per cent of the population who live in small communities, and who cannot be sent to medical centers for these services without great inconvenience to themselves and their families.

3. No one doctor can possibly render all of the technical services needed.

4. Regardless of who ultimately pays the cost, the small community cannot economically provide separate technicians for rendering these services.

5. The pharmacist is a technician whose present distribution is comparable to that which will be required of all technicians.

6. Since his aim is to distribute a health service, the pharmacist is wasting most of his time and a large part of his investment.

7. In order to gain the understanding necessary for loyal cooperation, future doctors would profit by a curriculum including that which is presented to the technicians whom they will direct.

In addition to making the above assumptions, I will attempt to prove the inevitability of radical postwar changes in at least one of our educational systems. I conceive the creation of a new type of college as the foundation for the adequate distribution of medical care. An attempt is made to rationalize all changes advocated, on the basis of the need for changes and the economic feasibility of making them.

It is hoped that publication of the ideas herein contained will stimulate enough intelligent discussion to get them evaluated for whatever they are worth.

### INEVITABILITY OF CERTAIN CHANGES

That the war effort has caused drastic changes in the education toward the practice of medicine and allied professions no thinking person will deny. Dalton<sup>1</sup>,

1. Dalton, J. N.: Premedical and medical education as related to the U. S. Army. *J. Am. M. Ass.*, 121:633-635, 1943.

in outlining the Army's new premedical program, brings out the magnitude of one of these changes which have been brought about by the exigencies of total war. The Army program compresses 86 semester hours of premedical work into 64 weeks of elapsed time. Diehl<sup>2</sup> states that, in the judgment of the Association of American Medical Colleges, a student cannot be prepared adequately to meet the requirements of modern medical education in less than two years. Lull<sup>3</sup> tells us that the program, while making radical changes in premedical work, will interfere little with existing medical education. Therefore, that the coming of peace may be expected to necessitate a new set of radical adjustments is axiomatic. It is also axiomatic that by comparison with the prewar system of this phase of the distribution of health services, the new one can either be identical, better or worse for both the public and the professions. The first possibility can be dismissed, because history teaches us that it is highly improbable that a system once changed will ever revert to its original system. This, then, leaves the challenge to create a new system after the war which will be better than that existing prior to 1941.

#### THE GOAL OF THE MEDICAL PROFESSION

Long before the publicity given in the early 1930s to the findings of the Committee on the Costs of Medical Care in the United States caused public opinion to spur sociologists and others into a search for a better method of distribution of medical services, the conscience of the medical profession had caused it to do the same thing. Rappleye,<sup>4</sup> in 1930, after having spent five years as director of studies of the Commission on Medical Education, stated that the greatest problem before the medical profession was the adequate distribution of modern medical services to the entire population at a reasonable cost. In so far as the altruism for which the profession is noted is concerned, surely this will always be its greatest problem. The voluminous literature on the subject attests the fact that a workable plan to solve this problem is the chief goal of the profession.

#### AIMS WHICH WILL NOT RESULT IN A SATISFACTORY PLAN

Many plans have been brought forward for the attainment of the above goal, but because none have been viewed by a majority of authorities as advocating a better system than the old, none has been universally nor even very generally adopted. Since, as further stated by Rappleye, "knowledge of the diagnosis, treatment, and prevention of disease is far in advance of its application to individual and community needs," any plans for radical or revolutionary changes aimed to give a better system than the present one will miss their mark if directed toward omitting any of the present curricula upon which that knowledge is based. They will also miss their mark if directed toward decreasing the availability to the public of the services of the general practitioner. Of the latter, Fishbein<sup>5</sup> says: "Increasingly the general practitioner, who must be responsible

2. Diehl, H. S.: Medical education and the procurement and assignment service. *J. Am. M. Ass.*, 121:635-638, 1943.

3. Lull, G. F.: Medicine and the war. *J. Am. M. Ass.*, 121:638-640, 1943.

4. Rappleye, W. C.: Current problems of medical education. *J. Am. M. Ass.*, 94:915-917, 1930.

5. Fishbein, M.: The function and future of the American Medical Association in medical education. *J. Am. M. Ass.*, 94:911-915, 1930.

for at least 80 per cent of the medical practice in our country and who should be responsible for 90 per cent, avails himself of clinical laboratories . . . .” Plans for making adequate distribution of health services will miss their mark if they fail to provide for such things as obstetrical anesthesia, prescriptions, and X-ray and laboratory facilities for the general practitioner’s patients whether he be practicing in a medical center or in a crossroads community.

Since a single pair of hands is inadequate to perform all of the tasks necessary to render modern medical services to each patient who presents himself to a doctor for these services, any plan which does not aim to provide the lone doctor at the crossroads with a trained technical assistant will fail its purpose. And, since the problem involves “at reasonable cost,” any plan for its solution which aims to shuttle most patients from one technician to another, from one community to another, or from one doctor to another will also fail. In the following statements the final report of the Commission of Medical Education<sup>6</sup> brings out the fact that such plans will likely fail if directed toward compulsory insurance or so-called socialized medicine: “All previous efforts have shown that insured persons demand more services than uninsured, thus increasing the cost”; and, “Sound medical service can be rendered only when a single physician assumes direct responsibility for a given patient.”

#### AIMS WHICH ARE PREREQUISITE TO A SATISFACTORY PLAN

What, then, should be the aims of a plan whose goal is the adequate distribution of modern medical services to the entire population at a reasonable cost? The answer is that in addition to accessibility to adequate dental care, and to a medical center providing a general hospital and the various medical specialists, every community in the nation, large enough to support one general practitioner, must be provided with:

1. A general practitioner qualified to recognize eye pathology and to interpret simple X-ray and laboratory findings.
2. A citizen qualified to compound prescriptions.
3. A citizen qualified to refract eyes; he need not be qualified to recognize pathology.
4. A citizen qualified to give general anesthetics of the type needed by a general practitioner.
5. A modestly equipped X-ray laboratory.
6. A clinical laboratory.

Any satisfactory plan must also aim to appeal to the imagination of the public to the extent that the weight of public opinion will back it and spur those who can make it possible to act accordingly. Last, but far from least, the plan must be so logical that it will receive the approval of the majority of the medical profession, and it must so stimulate interest that the ordinarily inarticulate majority of that profession will make itself heard with a demand for action. Many plans

<sup>6</sup> Final report of the commission on medical education. *Medical Care for the American People*, Univ. of Chicago Press. Chicago, 1932. *Abs. J. A. M. A.*, 99:2206-2208, 1932.

have been, and doubtless, many will be submitted before these prerequisites are ever met in their entirety. Such a plan will not likely come from a single individual nor from a single profession.

#### A PLAN AIMED AT SATISFYING CERTAIN PREREQUISITES

The attainment of any such Utopian ideal as outlined above probably can not be achieved with anything less drastic than revolutionary changes in a great many fields, happily not including the field of general medical practice as it exists today. The provisions might be made economically within a decade or two if the creation of a new college in our universities could be made practical. The college would have to combine the many overlapping courses now offered to the student in premedicine, preclinical medicine, pharmacy and X-ray and laboratory technique. Courses which do not increase the student's ability to serve the health needs of his community would have to be sacrificed to make room for sciences which would. Without attempting to describe nor to allot hours to each, the accompanying chart (Table 1) shows a tentative list of courses which might be considered in the curriculum of such a college.

TABLE 1  
Tentative schedule for curriculum of new college

<b>FIRST YEAR</b>		
<b>Fall Quarter</b>	<b>Winter Quarter</b>	<b>Spring Quarter</b>
Inorganic Chemistry	Inorganic Chemistry	Qualitative Analysis
English	English	Psychology
Botany	General Zoology	Pharmaceutical Arith.
<b>SECOND YEAR</b>		
Organic Chemistry	Organic Chemistry	Quantitative Analysis
Osteology	Materia Medica	Comparative Anatomy
Histology	Histology	Physiology
<b>THIRD YEAR</b>		
Physiological Chem.	Physiological Chem.	Physiological Chem.
Histological Tech.	Pharmacology	Pharmacology
Physiology	Physiology	Anesthesiology
To be followed by 3 mo. internship in anesthesia.		
<b>FOURTH YEAR</b>		
Theory and Technique of X-ray	Light and Optics	Optometry
First Aid and Hygiene	Ethics	Economics
Bacteriology	Clinical Pathology	Pharmacy
	Pharmacy	Theory of Probabilities and Statistics

It goes without saying that the new college would have to be conducted under the careful surveillance of some organized body if its desired purposes were to be served. This body could make sure that only high type individuals were graduated by the college, and could demand that the undergraduates be given enough of the ideals and ethics of medicine to preclude abuse of their broad educational acquirements. Any deficiencies in this regard which might remain after such surveillance would have to be taken care of either by legislation or, preferably, by the doctor with whom the graduate would necessarily be closely associated.

No such close association exists today between the doctor, and, as an example, the pharmacist as would exist between the doctor and the graduate of the new college.

Against any such curriculum for premedical students as that suggested in table 1 will arise a cry from various sources: "Very few cultural subjects are offered, where will the student get his cultural background?" Reid,<sup>7</sup> in defending his plan to take students into medical college directly from high school, answers thus: "It is emphasized that attendance at college is not the sine qua non of acquiring culture." The individual who is born with the necessary moral or intellectual faculties will acquire culture whether he ever attend any sort of college or not. If he is ever to acquire it he will do so in the home, in the public schools, in his church, and in his daily contacts with his fellowmen, and no sort of college curriculum will ever take it from him. If he has acquired it by the time he reaches college he will broaden it by whatever curriculum is presented him, and by extracurricular reading while there and throughout his life. Let those who refuse to agree that the above statements are axioms content themselves with the affirmative answer to this question: Would the ends gained justify the means used?

TABLE 2. SUMMARY OF TOTALS FOR FIVE YEARS OF ALL APPLICANTS TO MEDICAL COLLEGES (FROM ZAPFFE)

	1937	1938	1939	1940	1941
No. Applications .....	34,416	36,268	34,871	34,434	34,655
No. Applicants .....	12,207	12,131	11,800	11,854	11,940
Single Applicants .....	6,564	6,249	6,089	6,146	6,110
Accepted .....	3,423	3,117	3,064	3,161	3,341
Rejected .....	3,141	3,132	3,025	2,985	2,769
Multiple Applicants .....	5,643	5,882	5,711	5,708	5,830
Accepted .....	2,987	3,106	3,147	3,167	3,481
Rejected .....	2,656	2,776	2,567	2,541	2,349
Applicants Accepted .....	6,410	6,223	6,211	6,328	6,822
Applicants Rejected .....	5,797	5,908	5,589	5,526	5,118

Graduates of such a college as that outlined above could be qualified to enter medical colleges and receive their doctor's degrees in either three or four years, depending on whether the curricula of medical schools remained as they are at present or were increased by one year, as advocated by many educators. Without continuing their studies through medical school, graduates could be competent to fill doctor's prescriptions; to make and develop X-ray photographs; to make clinical laboratory determinations; to administer general anesthetics; to refract eyes; to practice and teach first aid; and to administer medications to patients by whatever route a doctor might order. In addition, their educational background for assuming the duties of a medical administrative officer in the armed forces could be excellent.

7. Reid, W. D.: Take them earlier and keep them longer. *J. Ass. Am. M. Colls.* 6:149-157. 1931.

Under the general educational system existing in the United States prior to 1941 there was no provision for the training of a reserve medical administrative corps anywhere nearly adequate to fill the needs of a rapidly expanding military force. If such a reserve corps would free any large number of doctors from administrative duties in case of war, then provision for it is highly important in any plan aimed at maintaining an adequate distribution of modern health services to the entire population at all times. To the curricula of as many of the new colleges as deemed advisable to Congress and to the Surgeons General, could be added training for the duties of an officer in the Army.

A consideration of available statistics will leave very little doubt that the new colleges would be well attended. As will be seen in table 2, the medical colleges have rejected about as many students as they accepted in the five years previous to 1942. The majority of those denied the privilege of completing their medical education had been forced to spend three years or more in the adherence to a curriculum which did not fit them for any specific means of earning a livelihood. In spite of this economic drawback to premedical education, our colleges each year finished enough "premedics" in excess of the number the medical schools could accept to eventually bring the ratio of premedical-graduates: doctors to

TABLE 3. FIGURES TAKEN FROM STATISTICAL ABSTRACT OF UNITED STATES FOR THE YEARS INDICATED

No. of retail dealers in drugs and medicines in 1910.....	67,575
No. of retail dealers in drugs and medicines in 1920.....	80,157
No. of retail dealers in drugs and medicines in 1930.....	104,727
No. of retail dealers in drugs and medicines in 1940.....	99,497
(These figures include managers and superintendents of retail stores as well as pharmacists.)	
No. of pharmacists in the United States in 1940.....	79,347

approximately 1:1. Table 3 shows the number of retail dealers in drugs and medicines for each census year since 1910, and while these figures are not conclusive on the number of pharmacists in the nation, they are illuminating. Of the 99,497 dealers in 1940, 79,347 were pharmacists according to Series P-16, No. 2 of the Bureau of the Census. Apparently, from these figures their number is on the decline. It seems safe to assume that the majority of students in pharmacy are there for the sole purpose of qualifying themselves to fill doctors' prescriptions. If this be true, a new college of the type mentioned would likely recruit most of the students the present colleges of pharmacy are getting. If this proselytism sounded the death knell to undergraduate colleges of pharmacy, graduate colleges would seem indicated to care for those students who wished to prepare themselves for pharmaceutical research.

The number of optometrists in the United States in 1940 was 10,237, or approximately one to every 13,000 total population, or one to every sixteen



physicians. Many of these men were trained in schools maintained for earning profit, and the medical profession objects to such a motive in the training of persons to be entrusted with the care of any portion of the human body. The medical profession also feels that the term "doctor" when applied to anyone dealing with the distribution of a health service misleads the public unless reserved for those who have completed a curriculum embodying studies of the known facts of the structure and function of all portions of those integrated units which make up the human body, both in health and disease; and also embodying studies of its response to drugs, chemicals, physical energies, manipulations and mechanical devices applied for the purpose of improving the body's functions. The training given the optometrists has failed to prevent the majority of them from referring to themselves as "doctor," although they have not completed such a curriculum as that described above. The new colleges might be expected to sound the death knell to such practices and to furnish a new tool to the medical profession in the form of an acceptable technician to whom could be relegated the bulk of eye refractions.

According to Diggs,<sup>8</sup> 700 technicians were graduated from approved schools for training medical technicians in 1940. Such new colleges as could associate themselves with a general hospital having at least 2,000 admissions per year, and as could maintain a 1:1 student-instructor ratio for practical work could meet the requirements of the American Society of Clinical Pathologists for approval to train technicians. Diggs points out that many more such approved schools are needed.

Before any such hypothetical new college as the one involved in this plan is created, careful stock of a number of things should be taken. The existing liaison between high schools and colleges, on the one hand, and colleges and medical schools, on the other, should be studied. Existing legislation in the various states as it affects the professions of pharmacy, laboratory technician, anesthetist, X-ray technician and optometry would have to be studied and in some cases revised before a new college could be practical. The question of whether or not a student should receive certain preclinical medical courses before he enters medical school should also be answered. Harvey, in a discussion of Robinson's<sup>9</sup> paper, answers the last question thus: "Four years in college seems all too long, but four years in medicine seems all too short, and we have deliberately adopted the policy of encouraging some students to study some medical subjects in the fourth year, perhaps in the third and fourth years of college work. Anatomy, histology, embryology, physiological chemistry and physiology are subjects which may be studied in the fourth year of college work, and these students come to the medical school with these things already fairly well covered. They are not asked to repeat them, but the medical course is not shortened." Clark, in discussing certain papers read at the fortieth annual meeting of the Association of

8. Diggs, L. W.: The training of medical technologists as a function of the medical school. *South. M. J.*, 35:1104-1107, 1942.

9. Robinson, G. C.: A study of several experiments in medical education. *J. Ass. Am. M. Colls.*, 6:129-145, 1931.

American Medical Colleges in 1929 had this to say: "A medical man has to learn an unlimited number of scientific facts, and everything a medical student does after high school should tend toward training him in the appropriate sciences."

As to the question of liaison Smeaton<sup>10</sup> wrote the following: "The most effective coordination between high school and college work leading toward admission to a medical school, will relegate to the high school the requirement of at least two years work in either French or German, together with a year of physics providing laboratory instruction, and mathematics that includes algebra, geometry and trigonometry." He adds the following: "Evidently many high school superintendents and principals do not know the requirements for admission to a medical school and often they do not realize the responsibilities to the students who are looking forward to this profession. These administrative officers are furnishing to students promiscuous preparation for admission to colleges of literature, science and the arts without regards to the needs of the medical school." It is doubtful if the general situation has changed markedly since the above was written in 1930.

Lassek,<sup>11</sup> in 1942, said: "What the 'pre-medics' learn about medical schools and medicine is largely from gossip, layman's magazines, novels or the cinema." . . . "Not many teachers in the colleges and universities have ever set foot in a medical institution, conversed with medical educators or studied medical education." "I believe that in the future medical educators will insist that a background in medicine should begin earlier than is the case at present."

Apparently liaison needs much strengthening before a new college could be made practical, particularly one which does not give a course in elementary French or German. The word elementary is used because it might be practical to convert one minor course in each year's curriculum into something of a reading course in one of these languages in an attempt to give the student a reading knowledge of scientific literature of the language while teaching him the subject matter of the course. On the desirability of a medical student's ability to read French and German, Williams<sup>12</sup> comments thus: "Inability to read these languages is virtually equivalent to exclusion from the privilege of reading about two-thirds of the books which are, or should be, in a well appointed scientific library." In a rebuttal to a discussion of his paper, he said: "Now as to the reading in foreign languages, it is my impression that the best physicians read about as much in foreign languages as in their own."

#### ECONOMIC FEASIBILITY OF THIS PLAN

Certainly, in technical education at least, the economic practicality of the work for which a college fits its students should motivate its creation. A significant number of the graduates of the hypothetical school in question would be expected to make a living rendering services in small communities which, so far,

10. Smeaton, W. G.: Some aspects of premedical education. *J. Ass. Am. M. Colls.*, 5:146-151, 1930.

11. Lassek, A. M.: Neglected "premedics." *J. Ass. Am. M. Colls.*, 17:175-177, 1942.

12. Williams, H. B.: Modern foreign language preparation for medical school use. *J. Ass. Am. M. Colls.*, 5:138-145, 1930.

only larger centers have been able to finance. However, it does not take an economic expert to prognosticate a fair degree of prosperity for the citizen of a small community who, working in close and understanding cooperation with the doctor, provides the community with its medicines, glasses, anesthetics, X-rays, and laboratory determinations. No single college has thus far ever attempted to prepare any one man to do all of this, and no small community can support five individuals to render these services, regardless of the urgency of the need for them. It is to be hoped that the citizen who does all of this work would not have to compromise with the ideal situation to the extent of operating a so-called drug store, but the pharmacist has already proved that he can if he must. The average trade area census necessary to support a single drug store is approximately 2,000. Therefore, communities of this size, that are now supporting a doctor and a drug store, could support a very valuable citizen who is not now in their midst.

The question next arises as to whether or not a community of 2,000 people could support an investment large enough to provide laboratory, X-ray and optometry equipment in addition to the prescription equipment it now supports. For the answer to this question we may have to turn to the economic experts, but we can at least stimulate their cerebration along the subject with facts known to us. Today's average prescription department, which has such a small part of the pharmacist's time devoted to it, is financially burdened with a stock of proprietary preparations. Doblely bemoans our tolerance of these in this statement: "Yet we condone in programs, official publications, classrooms, National Board and other examinations, and in our conversations, names which are only vicious sales devices invented solely for therapeutic deception and unconscionable profits." One wonders what would be the effect on the retail price of such commodities as insulin, diphtheria antitoxin and others that only the pharmaceutical manufacturers can give us if the profession generally suddenly ceased using their proprietaries. One also wonders what would be the effect on our journals and on pharmacological research if the financial support which they receive from the advertising budget of these manufacturers were suddenly withdrawn. Whether we subscribe wholeheartedly to Doblely's unflattering remarks or not, from an economic standpoint we probably should not tolerate these proprietaries. Their cost to the pharmacist is ordinarily much higher than the total wholesale cost of their ingredients, a very significant fact which has not been sufficiently impressed on the medical profession. Even if we did not object if it were, this increased cost cannot be passed entirely onto the consumer, and the result is that the pharmacist's profit is cut down. While we have not been particularly interested in whether or not the druggist made a profit on prescriptions, we would probably have received a great deal more cooperation from him if we had been, and we certainly must encourage a good profit if we expect to get well trained, highminded technicians for our associates in the rural areas.

The pharmacist has to stock not only the proprietaries, but their individual ingredients, the latter for use in those rare prescriptions which he himself must compound. He also has to stock many different proprietaries each containing

ingredients common to the others. As an example, then, his stock of chemicals might contain the essential one pound bottle of potassium citrate while he might have another pound or two scattered about his shelves as the common ingredient of a dozen or so proprietaries. If one multiplies the above conception by the number of drugs and chemicals in their unadulterated state which are stocked by a pharmacy, it will be apparent that the pharmacist might easily have an investment of five, ten or even twenty times the amount necessary to serve the drug needs of his community. It would be inspiring, to say the least, to know for certain that in most drug stores this unnecessary investment would pay for the X-ray, optometry and laboratory equipment needed at the country crossroads throughout America.

TABLE 4. SCHOOLS, STUDENTS AND GRADUATES IN THE U. S. 1905-1942  
(From 42nd annual presentation of educational data by The Council on Medical Education and Hospitals)

Year	Schools	Students	Graduates
1905	160	26,147	5,606
1910	181	21,526	4,440
1915	96	14,891	3,536
1920	85	13,798	3,047
1921	83	14,466	3,186
1922	81	15,635	2,529
1923	80	16,960	3,120
1924	79	17,728	3,562
1925	80	18,200	3,974
1926	79	18,840	3,962
1927	80	19,662	4,035
1928	80	20,545	4,262
1929	76	20,878	4,446
1930	76	21,597	4,565
1931	76	21,982	4,735
1932	76	22,135	4,936
1933	77	22,466	4,896
1934	77	22,799	5,035
1935	77	22,888	5,101
1936	77	22,564	5,183
1937	77	22,095	5,377
1938	77	21,587	5,194
1939	77	21,302	5,089
1940	77	21,271	5,097
1941	77	21,379	5,275
1942	77	22,031	5,163

The same line of reasoning which condemns the proprietary drugs is just as applicable to the far less tolerable patent medicines. Even before the public's vitamin consciousness opened up a new field for those who provide the means of self-medication, an unwary American public was spending approximately three hundred and sixty million dollars annually for patent medicines. Unhappily, although the investment of the pharmacist in these items would probably go far toward offsetting the cost of needed equipment, starry eyed, indeed, will be the reformer who attempts, within a decade, to silence the authoritatively toned, persuasive voiced radio announcers who are prescribing these panaceas for their unseen listeners. It is not likely that this particular investment of the pharmacist will be liquidated and used for a more worthy cause any time soon.

The logical answer to the question of how to prevent the doctors from prescribing proprietaries seems to be: Teach them the fallacy of so doing and at the same time teach them what to write instead. DeGraff<sup>13</sup> writes: "It is generally recognized that most students graduate from medical colleges with a highly empiric knowledge of drug therapy and are thus unprepared to evaluate critically the medical literature and brochures of drug houses." Doble<sup>14</sup> says: "It is a surprise to many clinicians that many drugs which they prescribe under trade names, have official names." Leighton<sup>14</sup> states: "When I graduated in medicine, the men from my school knew materia medica and its therapeutic application . . . and knew that there was such a thing as a National Formulary and a United States Pharmacopoeia. That is more than I can say for any of the schools today." If our hypothetical new college were created it would teach the medical student the materia medica that he has been missing for a good many years, and in so doing could indirectly free a great many of the pharmacist's dollars for the purchase of X-ray, laboratory, and optometry equipment.

#### SUMMARY

1. The advent of peace will necessitate readjustments in medicine and allied professions as radical as those caused by the war.
2. The goal of medicine is the adequate distribution of modern medical services to the entire population at a reasonable cost, and with the least possible inconvenience to the patients.
3. The organization of a reserve medical administrative corps to serve in the army in times of war may be conceived as a step toward attainment of the goal.
4. The setting up and continuous application of close liaison between high schools, colleges and medical schools must precede or be a part of a logical foundation for the adequate distribution of medical care.
5. Creation of a new college in our universities whose purpose would be the qualification of candidates for medical school, and the graduation of general purpose, high-minded technicians would seem logical.
6. Proprietaries are in general use by the medical profession only because medical education has failed to provide enough economics and materia medica.

#### CONCLUSIONS

Any serviceable solution to the problems confronting the medical and allied profession for the past quarter of a century must take into consideration the legislative, educational, social, economic and professional aspects of those problems. It must be founded upon a plan which, among other things, allows for the

13. DeGraff, A. C.: Interrelationship of pharmacology and therapeutics. *J. Ass. Am. M. Coll.*, 16:354-357, 1941.

14. Leighton, A. P.: What is wrong with teaching of materia medica and therapeutics in medical schools? *J. Ass. Am. M. Coll.*, 16:367-370, 1941.

economical distribution of X-ray, laboratory and optometric equipment, and which provides technicians for using this equipment in every community in the nation large enough to support one doctor and one of today's pharmacists. Such a solution must be founded on a plan which also makes possible the administration of a general anesthetic in the doctor's office or in a home whenever necessary. The solution will not come from one individual nor from one profession, but it might be founded upon a plan to create a new college to broaden the education of the pharmacist to such an extent that he could serve in each technical capacity required by an adequate rural health program. Established bodies, like the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association, who have disapproved the proposals made from time to time that pharmacists undertake many of the laboratory services which doctors perform, might reconsider their decisions in the light of today's conditions.

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## Hours of Work Required in Anatomy in the Medical Schools of the United States

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The variation in the number of hours devoted to anatomy in various medical schools is indicated in the following table. This information was obtained in November, 1942, by a questionnaire sent to all the medical schools in the United States.\*

School	Gross			Neuro.			Micro.			Micro. and Embr. Combined	Embryology		
	Lect.	Lab.	Ttl.	Lect.	Lab.	Ttl.	Lect.	Lab.	Ttl.		Lect.	Lab.	Ttl.
Buffalo .....	40	190	230	36	112	148	36	54	90	.....	.....	.....	.....
Boston .....	.....	243	243	14	44	58	50	98	148	.....	27	54	81
Harvard .....	44	234	278	15	66	81	30	150	180	.....	8	18	26
Illinois .....	32	250	282	15	60	75	24	120	144	.....	15	60	75
Howard .....	99	198	297	33	66	99	33	66	99	.....	33	66	99
Chicago .....	.....	.....	300	.....	.....	90	.....	.....	90	.....	.....	.....	.....
Yale .....	.....	.....	308	.....	.....	40	.....	.....	.....	66	.....	.....	.....
Virginia .....	35	280	315	12	63	75	39	105	135	.....	20	70	90
Oklahoma .....	48	272	320	24	48	72	60	120	180	.....	20	40	60
West. Reserve .....	100	220	320	36	60	96	48	120	168	.....	24	36	60
Johns Hopkins .....	.....	320	320	22	44	66	20	100	120	.....	.....	.....	.....
Texas .....	86	240	326	31	60	91	67	120	187	.....	.....	.....	.....
L. S. U. ....	111	218	329	53	82	135	62	98	160	.....	18	30	48
Minnesota .....	66	264	330	33	66	99	44	120	164	.....	33	66	99
Northwestern .....	30	300	330	23	94	117	39	117	156	.....	26	78	104
Louisville .....	48	288	336	32	64	96	60	120	.....	288	36	72	.....
Woman's Med. ....	84	260	344	36	80	116	38	110	148	.....	18	32	50
N. Carolina .....	90	260	350	30	60	90	50	100	150	.....	30	60	90
Indiana .....	34	316	350	17	68	85	34	136	170	.....	.....	.....	.....
Creighton .....	99	253	352	33	66	99	33	66	99	.....	33	66	99
Albany .....	80	326	366	16	74	90	48	84	132	.....	.....	.....	.....
Michigan .....	.....	.....	357	.....	.....	100	.....	.....	.....	226	.....	.....	.....
Columbia .....	.....	360	.....	40	48	88	40	120	160	.....	20	0	20
S. Carolina .....	10	350	360	25	75	100	40	120	160	.....	25	50	75
Ohio State .....	60	300	360	30	90	120	60	180	240	.....	30	60	90
Jefferson .....	.....	364	.....	.....	.....	69	.....	.....	.....	222	.....	.....	.....
West Virginia .....	26	340	366	36	59	95	34	119	153	.....	34	59	93
California .....	80	288	368	32	96	128	48	144	192	.....	.....	.....	.....
Syracuse .....	20	360	370	20	60	80	63	189	252	.....	.....	.....	.....
Hahnemann .....	148	225	373	29	.....	29	.....	.....	.....	225	.....	.....	.....
Marquette .....	60	315	375	30	60	90	60	75	135	.....	20	75	95
Duke .....	.....	375	375	.....	66	66	.....	99	99	.....	.....	.....	.....
Washington .....	32	347	379	18	72	90	22	176	198	.....	.....	.....	.....
Colorado .....	.....	380	380	10	80	90	15	185	200	.....	.....	.....	.....
St. Louis .....	96	284	380	32	64	96	64	144	208	.....	32	48	80
Alabama .....	96	288	384	32	64	96	72	160	232	.....	.....	.....	.....
Cincinnati .....	48	336	384	32	64	96	64	128	192	.....	.....	.....	.....
Temple .....	120	270	390	30	30	60	45	90	135	.....	.....	.....	.....
Missouri .....	99	297	396	33	77	110	55	110	165	.....	33	66	99

School	Gross			Neuro.			Micro.			Micro. and Embr. Combined	Embryology			
	Lect.	Lab.	Ttl.	Lect.	Lab.	Ttl.	Lect.	Lab.	Ttl.		Lect.	Lab.	Ttl.	
Oregon .....	132	264	396	33	99	132	22	66	88	.....	22	66	88	X
Tennessee .....	99	297	396	22	44	66	44	110	154	.....	22	44	66	
Stanford .....	30	369	399	33	77	110	40	176	216	.....	30	80	110	X
Wayne .....	25	375	400	42	90	132	50	110	160	.....	30	60	90	
Kansas .....	.....	.....	400	16	96	112	48	96	144	.....	.....	.....	.....	X
Cornell .....	.....	.....	401	.....	.....	88	.....	.....	.....	196	.....	.....	.....	
Arkansas .....	110	297	407	33	66	99	75	165	240	.....	48	66	100	
Vanderbilt .....	30	380	410	22	80	102	32	72	104	.....	.....	.....	.....	X
New York U. ....	44	367	411	22	66	88	22	99	121	.....	10	Y10	20	
Coll. Med. Evang. ....	80	232	412	34	60	94	29	70	99	.....	16	28	44	X
No. Dakota .....	80	386	416	32	48	80	32	144	176	.....	32	96	128	
Wisconsin .....	32	384	416	48	96	144	48	96	144	.....	.....	.....	.....	X
Chic. Med. Sch. ....	44	374	418	33	66	99	33	99	132	.....	33	66	99	
Baylor .....	120	300	420	30	60	90	65	125	190	.....	20	40	60	
Rochester .....	50	370	420	24	69	93	30	108	138	.....	.....	.....	.....	
Iowa .....	40	380	420	20	40	60	21	141	162	.....	.....	.....	.....	X
So. Calif. ....	36	388	424	32	80	112	32	133	165	.....	.....	.....	.....	X
Emory .....	70	361	431	25	95	120	32	139	171	.....	12	36	48	
Tulane .....	25	407	432	25	75	100	50	150	200	.....	25	75	100	
Pennsylvania .....	54	380	434	12	31	43	26	174	200	.....	.....	.....	.....	Z
N. Y. Med. ....	64	392	456	20	60	80	44	132	176	.....	.....	.....	.....	Z
Vermont .....	.....	.....	480	.....	.....	70	.....	.....	.....	176	.....	.....	.....	X
Georgia .....	88	396	484	33	66	99	55	99	154	.....	33	66	99	
Loyola .....	64	432	496	32	84	116	32	80	112	.....	24	60	84	

X—Prerequisite. (In some cases the hours were stated, in other cases they were not.)

Y—Demonstrations.

Z—Given with microanatomy.

\* The following colleges did not reply: Georgetown, George Washington, Long Island, Rochester, Pittsburgh, Meharry, Medical College of Virginia, Mississippi, Dartmouth, Bowman-Gray, South Dakota, Utah, Tufts, Maryland, Nebraska.

## Some Methods Used in the Instruction of Gross Anatomy

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During the last few years much has been written on the correlation of the basic medical sciences with each other and their integration with the clinical curriculum. A more satisfactory correlation and synchronization of the various anatomical sciences is being advocated and attempted by a number of schools. This is, indeed, to be desired, for no matter what the difficulties involved in effective presentation, embryology, histology, neurology and gross anatomy are discussions of structure and should be as closely associated in the classroom as they are in the body. In the medical curriculum, gross anatomy lends itself admirably as an example of a subject which requires a great deal of planning on the part of the instructor if he hopes to realize any real measure of satisfaction. It is at once a challenge to his ingenuity and a test of his endurance and patience. Because of the great size and volume of the subject matter, even the most earnest or superior student is likely to develop a distaste (and possibly disgust) for gross anatomy if the instructor fails to capture and maintain his interest. We have had a gratifying degree of success in solving this problem by means of a systematic use of variety in methods and procedure.

In order to systematize procedure in the course of anatomy, a tentative outline of the course in dissection was made on the basis of the Dissection Methods in Anatomy by Rollo E. McCotter. The general objective for the first quarter was to gain a comprehensive understanding of the upper half of the human body (to the level of the diaphragm), the lower half of the body being covered in like manner during the second quarter. All lectures and quizzes were arranged to synchronize with this outline. Moreover, the outline was continually revised as expediency permitted during the progress of the course.

Approximately two weeks were devoted to the orientation of the students and to the study of the bones of the skull. This, of course, is a carry over from the past and has its pros and cons, the chief argument in favor of this procedure probably being based on the discipline which it is reputed to afford the raw recruits from college.

Following osteology, dissection was begun. It is our contention that this is the critical point in the life of the freshman, as far as anatomy is concerned. No matter at what part of the course dissection is begun, it is then that the student can profit most by careful guidance and constant supervision. With this in mind, the objective was to follow through with the student in the classroom and laboratory, as well as at home by means of planned assignments. In every case, all study was centered around current dissection of the cadaver. Detail was emphasized only to the extent that it would facilitate a comprehensive appreciation of gross relationships. Oral quizzes and assignments were given daily, both in

the classroom and at the dissection table, this being a very useful means of stimulating the student and guiding his study.

A radical attempt has been made to forcefully bring to bear the importance of learning anatomy in such a way that it may be used later as a tool in the understanding and solution of clinical problems. The main objective of the course is admittedly to give a comprehensive understanding of the structure of the human body. Yet, structure in the absence of function loses most of its meaning. Therefore, a more logical and practical approach would seem to include the study of dynamic, functional or applied anatomy (as it is frequently termed). The student is taught that eventually all structure is subordinated to subserve the purposes or functions of the body.

The approach, therefore, has frequently been a functional approach to structure rather than a structural approach to function, the latter procedure carrying the liability of postponement of function and practical application to a later time in physiology and clinical study. An example of the former approach might be given through this typical question: "Give the actions of the biceps brachii muscle." When this question is answered, the student might be asked a question similar to this: "On the basis of the functions of the biceps brachii, prove its attachments (origin and insertion)." In this process the student is taught to reason out the structural attachments by simply knowing the actions. He is told that the only excuse for learning origin and insertion is simply to facilitate an understanding of the actions of muscles. Another approach to the same end is to have students study groups of muscles according to similarity of function, then to consider each single muscle action and subsequently to reason its attachments, using the text, of course, to check his accuracy.

Because of the wide scope of the subject, the less important elements of anatomy were subordinated, while the more important phases were emphasized by presenting them in a variety of ways. One method, quite satisfactory, was to submit to the students a group of problems in anatomy, and have them prepare for an oral quizz on these questions one week later. An example of such a question was this: "Which would cripple the hand more, to cut the ulnar nerve just above the elbow or to cut the median nerve in the middle of the forearm?" This question was submitted while the forearm and hand were being dissected. To solve this problem successfully, the student must know what structures are supplied by both nerves; he must know at which level the distributing branches leave the main nerve trunk; he must also know the functions of the muscles supplied by each nerve in order to evaluate the degree of injury in either case. By the old drudgery method, these same facts must be ascertained through memory, with no emphasis whatsoever on function, and little or no appreciation of factual correlation. These problems were discussed in oral rather than written quizzes, so that the entire class could benefit by hearing the various interpretations of the students, and, finally, the corrected one.

Another method of approach which brought very satisfactory results was the one in which students were allowed to submit one question (taken from the

text) which emphasized the functional aspects of structures studied previously. These questions were submitted with answers and pages of reference during the middle of each week, and the quizzes were held on Friday. Questions submitted were checked for accuracy and edited so as to present them in the most interesting form, and a grade was given for those questions which were found suitable to be presented to the class. On Friday, a volunteer was called on; the question was read. If he answered correctly, he was given a proportionate grade; if he missed, no grade was recorded. In any case, the student submitting this question was always called on to give the correct and complete answer before receiving a grade proportionate to the merits of his question on the one hand, and the clearness, completeness and accuracy of his recitation on the other. By this method, a great deal of anatomy was voluntarily studied, learned and presented to the class by students themselves—the incentive frequently being the desire to present the best question, and not the grade which would follow.

It is frequently a practice of students of anatomy to memorize textual material for recitation purposes only, hoping in this manner to derive a satisfactory knowledge of the subject by amassing enough facts to pass examinations. As a result, they are, unfortunately, able to say or write the descriptive words, but do not have a fundamental or a useful mental picture of the structures under consideration. An attempt was made to discourage this type of procedure by pointing out significant structures to be studied, and insisting that a basic knowledge of these be gained primarily from the cadaver. A great deal of emphasis has been placed on visualization. For instance, a standing requirement was that every recitation be accompanied by a blackboard sketch of the structures being discussed. No emphasis was placed on the artistic value of the drawing, the fundamental purpose being an effort to have the student supplement his discussion with a simple sketch which would represent the mental or visual image which he had acquired from his previous study. Such a recitation, being presented to the entire class during quizz periods (daily), has very definite teaching value. Students were advised to practice sketching anatomical structures while studying in the laboratory and at home. Final examinations called for at least one, frequently more, well labelled drawings. Inability to draw has no important bearing in this procedure, the skill required to interpret one's own poor sketch being comparable with that necessary to read one's own poor handwriting. Students themselves admitted that no matter how unartistic their sketches were, the conceptions gained were clearer and the impressions made were more lasting. This probably is analogous to the situation in which one is introduced to a stranger, remembers the face, but forgets the name.

Oral quizzes at dissecting tables offer a variety of means for emphasizing important anatomical relationships and functions. Discussions at the dissecting table should bear a degree of significance for the freshman similar to that which the bedside has for the upper classman. This is an opportunity not only to determine how much the student knows at a given time, but also to ask suggestive questions designed to guide his approach and excite his interest and curiosity in advanced study.

In order to impress students with the importance of anatomy in clinical medicine, several clinicians were invited at various times to speak for a few minutes on the value of anatomy as related to their respective specialties. The objective here was simply to emphasize that the dead and lifeless structures on the cadaver were once the active and dynamic organs of a living body, and that unless the knowledge of structure learned through study of this dead body can be used to understand the workings of the live body, the most fruitful phase of the course in anatomy will not be realized.

Some criticism has been offered on the manner in which material is presented in standard textbooks of anatomy. For instance, the traditional arrangement includes practically all of the muscles in one part of the book under the head of myology, all of the bones under osteology, etc. This specialization in arrangement of textual material has often found a carry over in classroom procedure, and students have frequently been observed in the process of "learning all of the vessels or nerves" to a part without having a satisfactory knowledge of the part itself, or of the relation of the part to the remainder of the body. The futility of such a procedure is clear, and the necessity for organization and logical arrangement of material is obvious, lest the student acquire such a narrow and cramped viewpoint that he finds it increasingly difficult to complete the connection or bridge the gap from structure to structure or region to region. As an example, an instructor can usually find some one in the classroom who can name the arteries and veins of the head and neck, but who is immediately at sea when first asked to trace a drop of blood from the heart through the neck, head and neck respectively, naming the vessels through which the blood must pass in its course. Yet, these arteries and veins have no excuse for existence other than to transmit drops of blood through the various regions of the body.

In order to facilitate the study of anatomy from its broader aspect, the class was divided into a number of small groups, each consisting of four students. Each group was assigned a subject which was to be worked out by the group. Written and oral reports were to be given by the group at a stated time. The subjects chosen were comprehensive in nature and were designed to emphasize function as well as structure. An example of a typical assignment might be—"The Comparison and Contrast of the Functional Anatomy of the Upper and Lower Extremities." In order to insure that each member of the group would become familiar with his entire subject, the instructor used the lottery method to determine the order in which the speakers of a given group were to be called. The project proved quite satisfactory, its effectiveness being evaluated largely on the basis of the unsolicited interest stimulated among the students as well as the fine presentations which resulted.

The outline of the course was so arranged that several days would be allowed for intensive review before final examinations. This again offered an opportunity to emphasize the desirability of a comprehensive rather than a narrow and limited knowledge of anatomy.



# JOURNAL

OF THE

## Association of American Medical Colleges

Volume 18

NOVEMBER, 1943

Number 6

### *Applicants for 1943 Freshman Class*

The delay occasioned by the late receipt of application cards from a few medical schools is responsible for the lateness of the usual annual report made on the applicants for admission to the freshman classes of the medical schools of the United States, the number of applications they made and what happened to them. The study is not yet completed but the following data are now available. They pertain to those applicants who sought admission to the first freshman class in 1943 under the accelerated program. Twenty-three medical schools have already or will before the end of the year enroll a second freshman class in 1943. The figures on this class are not included in the figures given at this time.

What may be termed the first war class entered medical school in July 1942. As was to be anticipated, the number of applicants increased considerably over the number for 1941, as did also the number of applications made by them. Because of the larger number of applicants, the percentage of acceptances fell below that for 1941 although the number of applicants actually was about the same as in 1941. For 1943, the number of applicants was 10.0 per cent larger than in 1942, but they made 10.0 per cent fewer applications than did the applicants in 1942. Because of the larger number of applicants, the percentage figures as compared to actual numbers of applicants are a duplicate of those for 1942. Therefore, the medical colleges are still accepting as many students as they can accommodate according to their facilities and teaching personnel. As everyone knows, faculties have been depleted considerably, in some schools al-

most to the point where it is becoming problematical whether the school can continue to carry on. Nevertheless, they all are doing the best they can.

It is strange that the number of single applicants for 1943 was very much larger than in 1942, about 20 per cent. Why this was so cannot be stated until all the data on this study have been completed. It is possible that many more students who had less than three years of college work were taking advantage of the minimum requirements for admission to medical school. If that is true, it will account for the increase. The number of accepted single applicants is about 5 per cent larger than it was in 1942. If this is looked at in terms of percentage, then only 41 per cent of single applicants were accepted as against 47.7 per cent in 1942 and 54.7 per cent in 1941. Yet, the actual number accepted was about the same in 1941 and 1942 with an increase of 5 per cent in 1943.

Of the multiple applicants, there were 5 per cent fewer in 1943 than there were in 1942 and approximately 20 per cent fewer were accepted in 1943 than in 1942. The reason for this difference is not apparent at this time. Its discovery will have to wait until the study is completed.

The total number of accepted applicants fell 5 per cent below the number accepted in 1942. However, the returns of enrollment blanks made by the medical schools show that the first freshman class for 1943 will top in numbers the 1942 class by about 200, bringing the total to about 6,700. All accepted applicants do not enter medical school in the year in which application was made. There are, of course, a number of reasons for this. One reason is that the student finds himself unable to finance

the year; another is that quite a number of students merely want to know whether they can secure an acceptance and, getting it, they go on the waiting list for the next year. In 1943, however, the number of accepted applicants who failed to enter medical school was considerable smaller than it was in preceding years. Let us hope that the reason was not an unpatriotic one.

In 1942, 6,835 applicants were accepted. About 500 of that number did not enter medical school that year. At the end of the year, 6,502 freshmen were reported on by the medical schools. Among that number were about 150 repeaters who did not need to make another application, hence were not included in the number of accepted applicants given above. Unless one is familiar with all the reasons for variations in published figures, the whole thing is apt to be very confusing. With knowledge comes clarity.

The full details on this study of applicants will be published later.

\* \*

#### *The Cleveland Meeting*

The fifty-fourth annual meeting of the Association of American Medical Colleges was held in Cleveland, October 25-27, 1943. The attendance was better than ever before, only three member colleges not being represented by one or more delegates: Temple University School of Medicine, University of Manitoba Faculty of Medicine and the College of Medicine of the University of the Philippines. The total number of delegates from member colleges was 176.

The program was a most satisfactory one, covering many phases of medical education in which medical colleges are especially interested—and concerned with—at this time. It is certain that no one regretted being present at the meeting.

The following officers will serve the Association for the year 1943-1944: President, E. M. MacEwen, State University of Iowa; president-elect, A. C. Furstenberg, University of Michigan;

vice-president, Philip A. Shaffer, Washington University; secretary, Fred C. Zapffe, Chicago; treasurer, A. C. Bachmeyer, University of Chicago. Executive Council: President, past president, president elect, vice president and four elected members: W. C. Rappleye, chairman; R. H. Oppenheimer, Maurice H. Rees and L. R. Chandler; the secretary and treasurer are ex-officio members.

Detroit was selected for the 1944 meeting. Time: October 23, 24 and 25. Wayne University College of Medicine will be the host. The Association last met in Detroit in 1892 under the presidency of Dr. Nathan Smith Davis, dean of the Chicago Medical College, now the Northwestern University Medical School. Dr. Davis was the founder of the American Medical Association.

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#### *Faculty Members of the Association*

The larger attendance at the Cleveland meeting probably was due to the fact that members of faculties, other than the dean, finally came to realize that they are all a part of the Association and that it is not a deans' association. Membership of a college actually means not only 85 medical colleges but approximately 17,000 medical teachers members of the faculties of these colleges. Pronouncement to this effect has been made repeatedly, vocally and in writing. The program of the annual meeting has contained a statement to that effect but apparently little attention is paid to it. The representation at the annual meetings from the host college has been deplorable. Very few members of the host faculty have put in an appearance and these few usually come from the preclinical faculty. The clinical faculty is conspicuous by its absence. Whether this is due to disinterest, no knowledge of the meeting or a feeling that only deans may attend cannot be stated. But, again, attention is called to the fact that since 1907 at least one of the three sessions is given over to pedagogic papers often contributed by a clinical man. In fact, every effort has been made for the past 36 years to have the preclinical and the

clinical faculty represented on the program. Always the host college is furnished with from 100 to 150 copies of the program of the meeting so that every member of the faculty may receive a copy. Furthermore, the dean of the host college is urged to bring the meeting to the attention of his faculty and to state that this is *their* meeting, not his meeting. However, in spite of every effort made to bring the faculty to the meeting, failure has resulted. A review of the index of the proceedings and the JOURNAL of the Association will disclose a large number of papers on the teaching of every subject included in the medical curriculum. There has not been a slight of the faculty members of the Association. Faculty members have been encouraged in many ways to contribute papers for publication in the JOURNAL, with some result but not as much as is desirable. This publication is sent to every faculty member whose name is sent in by the dean. Every member college is entitled to receive 50 copies of the JOURNAL as a part of its payment of dues. While only about 5,000 copies are sent out of each issue, it is safe to say that at least twice that number of readers enjoy this publication—the only one in the world devoted entirely to medical education and medical pedagogy.

It is hoped that every recipient of this issue of the JOURNAL will read this

statement and impart its content to his fellow faculty members. And it is also ardently hoped that *every* faculty member will consider himself as being a member of the Association of American Medical Colleges on a parity with his dean—and take an equal interest in the affairs of the Association.

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#### *Dr. Arthur C. Bachmeyer*

Dr. Bachmeyer, treasurer of the Association of American Medical Colleges and associate dean in charge of clinics at the University of Chicago, was honored recently by the American Hospital Association with the "award of merit."

The citation described him as a "distinguished administrator and educator whose achievements have greatly advanced standards of treatment for patients, and educational opportunities to the lasting benefit of his fellow citizens."

Dr. Bachmeyer was the fifth person to receive the award, a gold medal, highest honor the association bestows.

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#### *Louis B. Wilson*

Dr. Louis B. Wilson, a former president of the Association of American Medical Colleges and director emeritus of the Mayo Foundation of the Graduate School of the University of Minnesota, died early in October, aged 76.

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## College News

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### *University of Illinois College of Medicine*

Dr. Fremont A. Chandler, associate professor of orthopedic surgery at Northwestern University Medical School, has been appointed professor of orthopedic surgery and head of the department at the University of Illinois College of Medicine. Dr. Chandler will also be director of the Illinois Surgical Institute for Children. He succeeds Dr. Henry B. Thomas, who is retiring at the university after an affiliation since 1909. Dr. Thomas was instrumental in establishing the surgical institute for children which opened for patients in May 1931.

The physical plant of the Illinois Eye and Ear Infirmary will be under the supervision of the state department of public welfare and all professional activities and all personnel connected with professional activities will be under the direction of the University of Illinois College of Medicine in accordance with an agreement recently announced by the university. Despite their appointments to Illinois, the members of the infirmary staff will retain their positions in other universities as well, and students of other Chicago universities will be given the clinical facilities of the infirmary as in the past. Dr. Harry S. Gradle, chief of staff of the Illinois Eye and Ear Infirmary, under the new setup becomes professor of ophthalmology at the medical school. Dr. Peter C. Kronfeld, dean of instruction at the infirmary, will become associate professor of ophthalmology at the medical school and director of education in ophthalmology.

The inaugural lecture of the D. J. Davis Lectureship on Medical History was delivered by Mr. J. Christian Bay, librarian of the John Crerar Library, October 15. His subject was, "A Prelude to Medical History."

A four-year curriculum in occupational therapy has been set up by the University of Illinois. Instruction began in

October. The program conforms with the most advanced practices advocated by the American Medical Association, and leads to a bachelor of science degree in occupational therapy. The curriculum centers in the University of Illinois College of Medicine. However, the students will spend their first five semesters of study on the University's Urbana-Champaign campus. Eight departments there will contribute specially designed courses in the program. Then the students will spend four semesters in the College of Medicine. During the first three of these, half of their time will be devoted to clinical experience, and during the last semester full time.

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### *University of Colorado School of Medicine*

Dr. William C. Black, professor of pathology, is now in Central America, taking one of the courses in Tropical Medicine, given under the auspices of the Association of American Medical Colleges. Dr. Lloyd J. Florio, associate professor of public health, took this course in July.

One hundred thirty-eight medical students in Army uniform, 48 in the Navy program, 14 women and 28 civilian men are in the school.

Dr. Arnold G. Wedum, formerly assistant professor of bacteriology at the University of Cincinnati College of Medicine, has been appointed assistant professor of bacteriology.

Appointments and promotions:

Dr. Harry Gauss, promoted to associate professor of medicine; Dr. Luman E. Daniels, promoted to associate professor of neurology; Drs. John S. Bouslog and Frank B. Stephenson promoted to associate professors of radiology; Dr. Ward Darley has been appointed full-time associate professor of medicine; Dr. Olan R. Hyndman, formerly of the State University of Iowa College of Medicine, has been appointed assistant professor of

surgery (neurosurgery); Dr. John M. Lyon and Dr. Robert W. Davis, promoted to assistant professor of psychiatry; Dr. William W. Haggart and Dr. Merrill C. Jobe, assistant professor of surgery; Drs. Charles G. Freed and William R. Lipscomb, assistant professors of surgery (neurosurgery) are now in military service.

The Executive Faculty has voted to reduce the length of the intern service to nine months.

Two alumni died in military service: William A. Epstein (1917), Commander, U. S. Navy, and Bernard J. Rike (1939), Lt., M.C., A.U.S., of typhus fever, in New Guinea.

Ralph L. Christy (M.D. 1940), Lt. (jg), Navy, was on the U. S. Aircraft Carrier Wasp when it was sunk, but was able to swim until he was picked up by the rescue ship.

The 29th General Hospital is still stationed at Fort Meade, where it has been since July 1, 1942.

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#### *University of Iowa College of Medicine*

The College library, located in the Medical Laboratories Building, consists of a large reading room with a seating capacity of 100 and four floors of stacks with a capacity for 80,000-90,000 volumes.

There are now about 37,000 volumes in the collection, 10,000 books and 27,000 bound periodicals. Approximately 430 journals are received regularly and bound as the volumes are completed. Books may be charged out for two week periods and periodicals for one week. A reserve collection of 350 books in constant demand is limited to use in the reading room for two hour periods. Since its inception, there has been a healthy and steady growth in the use of our library facilities. Average attendance is about 1500 to 2000 persons per week; home circulation about 14,000 volumes per year; circulation of reserve books about 20,000 per year; and room use of periodicals 22,000 per year. Messenger

service is furnished for transportation of material in other libraries on the campus, as Chemistry, Zoology, Psychology. The staff consists of two trained librarians and several student assistants. Hours are from 8 A. M. to 10 P. M. every day except Sunday, and during medical school vacations.

The first annual Joseph Graham Mayo Lecture was delivered by Dr. J. L. Bollman, associate professor of experimental pathology in the Mayo Foundation. His subject was, "The physiology of the experimentally impaired liver." This lectureship was endowed by Mrs. Charles H. Mayo in memory of her son, Joseph Graham Mayo, who graduated from the University of Iowa College of Medicine in 1927. From then until his untimely death in 1936 he served on the medical staff of the Mayo Clinic.

Dr. Olan R. Hyndman, associate professor of Neurosurgery, resigned to enter the private practice of neurologic surgery in Denver, Colo.

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#### *Albany Medical College*

Dr. Maurice L. Tainter, director of research of the Winthrop Chemical Company, Inc., Rensselaer, has been appointed professor of applied physiology. Dr. D. Ewen Cameron, professor of neurology and psychiatry, resigned on September 1, 1943, to accept another position. Dr. Arthur Knudson has been appointed associate dean. Dr. Thomas Hale, Jr., medical director of the Albany Hospital, has been appointed assistant dean. Dr. H. Beckett Lang, associate professor of psychiatry, and assistant commissioner, Department of Mental Hygiene, New York State Department of Health, has joined the U. S. Navy with the rank of Lieutenant Commander. Dr. Ralph Horton, medical director and superintendent of the Homer Folks Tuberculosis Hospital, Oneonta, New York, has been appointed instructor in medicine. Dr. John M. Chamberlain, also on the staff of the Homer Folks Tuberculosis Hospital, and principal thoracic surgeon to the New York State



Chest Hospitals, has been appointed instructor in surgery. Dr. Robert F. Korn, instructor in preventive medicine and public health, and epidemiologist at the New York State Department of Health, has been granted a leave of absence to take a course in tropical medicine at the Army Medical School in Washington, D. C.

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*Boston University  
School of Medicine*

The award of a scientific research grant by the Rockefeller Foundation to Dr. William C. Boyd, associate professor in biochemistry, has been announced. The grant, which is for two years, is to enable Dr. Boyd to continue his research work on immuno-chemistry. Dr. Boyd has distinguished himself in his field of biochemistry through his research in blood groupings, the results of which are being closely observed by anthropologists who expect that they may reveal important relationships between peoples existing now and those who lived in the earliest known period of history. A former grant which Dr. Boyd received from the Guggenheim Foundation enabled him to do original research in Egypt which included a study of 200 specimens of muscle and bone from Egyptian mummies. In the Syrian desert he studied the blood groupings of the nomadic Bedouins and Arabs. Dr. Boyd, who is assisted by his wife, has worked also in South-western Asia, including Syria, Iraq and Persia. Previously he received a grant given by the permanent Science Fund of the American Academy of Arts and Sciences.

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*Baylor University  
College of Medicine*

Appointments: Dr. James A. Greene, professor of medicine and chairman of the department and dean of the clinical faculty; Dr. Judson L. Taylor, professor and chairman of the department of surgery; Dr. Herman W. Johnson, professor of obstetrics and chairman of the department; Dr. James H. Park, Jr.,

professor of pediatrics and chairman of the department; Dr. Ernst W. Bertner, professor of gynecology and chairman of the department; Dr. James Greenwood, professor and chairman of the department of neuropsychiatry; Dr. Culver M. Griswold, professor and chairman of the department of dermatology and syphilology; Dr. Everett L. Boar, professor and chairman of the department of ophthalmology; Dr. Claude C. Cody, Jr., chairman of the department of otolaryngology; Dr. Joseph B. Foster, professor of orthopedic surgery and chairman of the department; Dr. Herbert T. Hayes, professor of proctology and chairman of the department; Dr. John M. Triple, professor of urology and chairman of the department; Dr. Stuart Anderson Peoples of the University of Alabama School of Medicine, University, professor of pharmacology.

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*Loyola University  
School of Medicine*

Dr. Amedeo, assistant professor of pharmacology, New York University, College of Medicine, has been appointed professor and head of the newly created department of pharmacology, succeeding the late Dr. Howard Ets as professor. Formerly this department was a part of the department of physiology and pharmacology, operating under the direction of Dr. Theodore Boyd, who now becomes professor and head of the department of physiology. Dr. Edward Piszczek, health commissioner of Cook County, has been appointed acting chairman of the department of bacteriology and public health, succeeding Dr. Kleinschmidt, who resigned.

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*Meharry Medical College*

Dr. William H. Grant, professor of Clinical Pathology, will soon leave for a three months' period of study at the School of Tropical Medicine in Puerto Rico. With Dr. Grant's experience in parasitology and clinical pathology plus his period of study in the Army Medical School last winter and this new oppor-



tunity in Puerto Rico, he will be ideally equipped to teach our students tropical medicine. Dr. E. P. Crump will soon be leaving for a year of study at the University of Minnesota. He has received a Rockefeller Foundation fellowship for this period. Dr. D. T. Rolfe will be leaving in the near future for a semester of study in physiology with Dr. Eugene DuBois at Cornell University School of Medicine. Drs. Cuff and Williams will be returning to Meharry during the next few weeks. Dr. Cuff has spent the year in the Institute of Pathology at Western Reserve University under the supervision of Dr. Karsner and Dr. Williams has been studying at Harvard University and Massachusetts General Hospital in the Department of Urology.

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#### *Woman's Medical College*

Appointments: Dr. Calvin M. Smyth, clinical professor of surgery; Dr. Rubin M. Lewis, clinical assistant professor of surgery; Dr. Miriam Bell, clinical assistant professor of medicine; Dr. Gladys R. Bucher, instructor in physiology; Dr. Adolph Hochwald, instructor in pathology; Dr. Violet M. Wilder, instructor in physiological chemistry; Dr. William I. Geffer, Dr. Charles A. Horan, clinical instructor in medicine; Dr. Mary Richardson, clinical instructor in pediatrics; Dr. Bernice E. Durgin, fellow in medicine; Dr. Dorothy E. Johnson, clinical assistant in obstetrics and pediatrics; Dr. Doris E. Rappaport, clinical assistant in dermatology; Dr. Morris Segal, clinical assistant in surgery; Miss Mary Ellis, assistant in therapeutics.

Promotions: Dr. Roberta Hafkesbringer, professor of physiology; Dr. Eunice L. Stockwell, professor of ophthalmology; Dr. William T. Lemmon, clinical professor of surgery; Dr. E. Frances Stilwell, associate professor of anatomy; Dr. Charles P. Bailey, clinical assistant professor of surgery; Dr. Margaret DeRonde, clinical assistant professor of psychiatry; Dr. Marjory K. Hardy, clinical assistant professor of dermatology; Dr. Dorothea M. Killian,

clinical assistant professor of therapeutics; Dr. Marion West, clinical assistant professor of medicine; Dr. Maria Wiener, instructor in bacteriology; Dr. Katharine C. Bartlett and Dr. Ellen R. Haines, clinical instructor in gynecology; Dr. Sara H. Maiden, clinical instructor in surgery.

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#### *Long Island College of Medicine*

Dr. Howard W. Potter, clinical professor of neurology and psychiatry, and Nicholas B. Dreyer, M.A., associate professor of pharmacology, have been granted full professorships. Dr. Dorothy Loomis has been named assistant professor of pathology; this appointment is said to be the first in the history of the medical school in which a woman has been named an assistant professor.

The Commonwealth Fund has awarded a six year grant to the Long Island College of Medicine, for the development of undergraduate psychiatric education, beginning with the sum of \$20,450 toward the current budget. The aims of the projected program are to train the medical student to understand and recognize the personal and environmental factors that often contribute to ill health, both physical and mental, the impact of somatic illness on personality, and the diagnosis and treatment of psychologic problems long before these grow into fully developed psychiatric disorders as one of the responsibilities of physicians in the mental hygiene area of public health and hygiene.

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#### *Wayne University College of Medicine*

The study of contaminated wounds now being carried on at the Wayne University College of Medicine will be continued throughout the fall as the result of a supplemental agreement with the Federal Office of Scientific Research and Development. The agreement, which provides the sum of \$5,000 for further study of the problem, was approved by the Board of Education at its last meeting.

*Louisiana State University  
School of Medicine*

Promotions: Dr. R. N. Bailiff, from instructor to assistant professor of anatomy; Dr. R. H. Bayley, from assistant professor to associate professor of medicine; Dr. Louis A. Monte, from clinical assistant professor to clinical associate professor of medicine; Dr. Rupert E. Arnell, from associate professor to professor of obstetrics and gynecology; Dr. Walter S. Wilde, from instructor to assistant professor of physiology.

New Appointments: Dr. William L. Williams, assistant professor of anatomy, and a number of instructors and assistants in physiology, surgery, pathology and bacteriology, biochemistry, pediatrics and medicine.

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*College of Medical Evangelists*

The Alumni Research Foundation of the College of Medical Evangelists, Los Angeles, has been created by recent action of the board of directors of the Alumni Association and the board of trustees of the College. The foundation is incorporated under the laws of California. While the primary purpose is to stimulate research, it may also accept gifts, grants, bequests and other forms of property to be used for charitable or educational purposes to aid the College of Medical Evangelists or advance medical science. At the first meeting of the board, August 8, the by-laws were ratified and Dr. Newton G. Evans, dean of the medical college, was elected president. The foundation consists of twelve to fifteen trustees.

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*Harvard Medical School*

Dr. Charles Walter Clarke, executive director of the American Social Hygiene Association, New York, has been appointed clinical professor of public health practice at Harvard University. Dr. Harry C. Solomon, clinical professor of psychiatry, has been appointed professor of psychiatry at Harvard Medical School and medical director of the Boston Psychopathic Hospital, succeeding the late Dr. C. Macfie Campbell.

*Georgetown University  
School of Medicine*

A convalescent ward is to be maintained in Georgetown University Hospital with \$290,000 bequeathed by the late Dr. Sofie A. Nordhoff-Jung, professor of gynecology emeritus. The physician, who died on June 6, declared in her will that with the exception of small sums her whole estate would go to the hospital. A bequest of \$35,000 was left outright to the president and directors of Georgetown University, the sum to be added to \$15,000 previously given for the ward. The convalescent ward will be named as a memorial to Dr. Nordhoff-Jung and her husband, the late Dr. Franz A. R. Jung. In 1923 Dr. Nordhoff-Jung established a cancer prize to encourage researches in the etiology, prevention and treatment of cancer.

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*Yale University  
School of Medicine*

A memorial room dedicated to the memory of the late Dr. James D. Trask has been completed and is now in use for lectures and seminars by the department of pediatrics. Dr. Trask, who graduated from the Sheffield Scientific School in 1913 and was associate professor of pediatrics at Yale, died on May 24, 1942, while serving as consultant to the Secretary of War in the investigation of epidemic diseases in the Army. The decorating and furnishing of the memorial room were made possible by funds contributed by medical students, by alumni of the pediatric service of the New Haven Hospital and by other friends and associates of Dr. Trask.

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*Dartmouth Medical School*

Capt. Winchell M. Craig (MC), U. S. Naval Reserve, chief surgeon, Naval Hospital, Naval Medical Center, Bethesda, Md., will deliver the W. J. and C. H. Mayo Memorial Lecture November 5. The title of his address will be "Warriors Against Disease." The lecture was established in 1942 by Dr. and Mrs. Waltman Walters, Rochester,

Minn., as "a stimulating factor in interesting men in medicine and surgery and, particularly, to call attention to the accomplishments of Drs. W. J. and C. H. Mayo in these fields."

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*Washington University  
School of Medicine*

The U. S. Public Health Service has made a grant to help finance a cooperative study of the gross anatomy of the spinal dura mater and the conformation of the posterior surface of the sacrum. The project is under the supervision of Mildred Trotter, Ph.D., and Dr. Virginia S. Lanier of the department of anatomy and Dr. Howard E. McKnight of the department of obstetrics and gynecology. It is anticipated that the results will be a contribution to the procedure of the administration of continuous caudal anesthesia in childbirth.

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*Tulane University of Louisiana  
School of Medicine*

Dr. L. Everard Napier, for twenty years professor of tropical medicine at the Calcutta School of Tropical Medicine, is visiting professor of tropical medicine. He has also been appointed consultant on tropical medicine to the Secretary of War. On August 4 Ernest Carroll Faust, Ph.D., professor of parasitology and acting head of the department of tropical medicine, was presented with a diploma of corresponding membership by the Academia Nacional de Medicina of Mexico.

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*University of Michigan  
Medical School*

Dr. Charles F. McKhann has resigned as professor of pediatrics and communicable diseases to become assistant to the president of Parke, Davis and Company. Dr. McKhann, who will devote his time entirely to the scientific activities of the company, is also giving up his position as professor of maternal and child health in the School of Public Health at Michigan.

*Marquette University  
School of Medicine*

Dr. Marcos N. Fernan-Nunez, professor of pathology and bacteriology, toured South Dakota, September 19 to 26, lecturing on tropical diseases to medical groups in Aberdeen, Huron, Sioux Falls, Pierre, Rapid City and Fort Meade. The trip was sponsored by the South Dakota State Board of Health and the U. S. Public Health Service to bring the latest developments in tropical medicine to the medical profession of South Dakota.

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*Cornell University  
Medical College*

Dr. Edward A. Strecker, professor and head of the department of psychiatry, University of Pennsylvania School of Medicine and consultant to the Army, Navy and Air Forces in psychiatry, delivered the annual Walter L. Niles Memorial Lecture October 19, under the auspices of the Tau Chapter of Nu Sigma Nu. His subject was "The Neuropsychiatry of Global War." The lecture is given annually in memory of Dr. Niles, a former dean of the medical college and for many years professor of clinical medicine at Cornell.

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*George Washington University  
School of Medicine*

Dr. Abraham R. Abarbanel, fellow in obstetrics and gynecology, was recently presented with the foundation prize of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons for 1943. Dr. Abarbanel's thesis was entitled "The Spasmolytic Action of Magnesium upon the Tetanically Contracted Human Uterus."

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*University of Mississippi  
School of Medicine*

Dr. B. S. Guyton has resigned the deanship. His successor is Dr. James B. Looper, professor of anatomy and formerly assistant dean.

*Stanford University  
School of Medicine*

Dr. Oscar Ivanissevich, professor of surgery and Director of the Surgical Institute at the University of Buenos Aires, will give the Morris Herzstein Medical Lectures for 1943 in San Francisco Nov. 15, 17 and 19. Dr. Ivanissevich, who has an international reputation in plastic and reconstruction surgery, is Exchange Professor of Surgery at Stanford University School of Medicine for the months of October and November.

The lectures will be given at 8 P. M. at the San Francisco County Medical Society, 2180 Washington Street. Titles will be: Nov. 15—General Consideration of Echinococcosis. Nov. 17—Echinococcosis of the Liver. Nov. 19—Echinococcosis of the Lung.

The Herzstein Lectures were established in 1929 by the late Dr. Morris Herzstein of San Francisco to be given under the direction of the medical schools of Stanford University and the University of California. They are given on alternate years by scientific men of outstanding achievement and are open to the public as well as to the medical profession.

Through a grant from the Irwin Foundation of San Francisco, the school has a new laboratory of electroencephalography. The laboratory will be under the direction of Drs. Frederick A. Fender, Henry W. Newman and Albert J. Lubin of the department of neuropsychiatry and is to be used clinically for research in connection with the war effort.

*University of Cincinnati  
College of Medicine*

A public campaign to raise at least \$300,000, to be donated to the college as a fund dedicated to the memory of Dr. Mont R. Reid, late professor of surgery, was launched recently under the auspices of a local committee. The fund is to be used to supplement the regular budget of the college and is intended to "honor the memory of a great citizen,

to advance the cause of medical science and teaching and to promote the health of our community."

*Indiana University  
School of Medicine*

Dr. Robert J. Masters has been appointed professor and head of the department of ophthalmology. Dr. William F. Hughes, who has been chairman of the department since 1934, will continue teaching in the department.

*University of Maryland  
School of Medicine*

Dr. Francis G. Evans, formerly instructor in the department of zoology, Duke University, has been appointed assistant professor of anatomy. Dr. Rubert S. Anderson of the Memorial Hospital, New York City, has been appointed assistant professor of physiology.

*Medical College of the  
State of South Carolina*

Dr. Francis B. Johnson, professor of clinical pathology, spent the month of September in Central America studying tropical diseases. Dr. Daniel E. Ellis, of the department of clinical pathology, took the course in tropical diseases at the Army Medical School.

*University of Minnesota  
Medical School*

The eleventh E. Starr Judd Lecture will be delivered in the Museum of Natural History Auditorium at the University of Minnesota, December 6, by Major Gen. Norman T. Kirk, surgeon general of the U. S. Army. His subject will be "Surgery in War."

Dr. Ernst Gellhorn, professor of physiology, University of Illinois College of Medicine, has been appointed professor of physiology and head of a special unit in neurophysiology for the study of infantile paralysis that the National Foundation for Infantile Paralysis is sponsoring for Minnesota.

*Wayne University  
College of Medicine*

The first full-time appointment of a Negro to the faculty of Wayne was confirmed by the Board of Education when Dr. C. W. Buggs of Dillard University, New Orleans, was made instructor in bacteriology. At Dillard Dr. Buggs was professor of biology and chairman of the division of sciences. He received his Master of Science degree at Morehouse in 1932 and his Ph.D. at Minnesota in 1934.

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*University of Utah  
School of Medicine*

Dr. Maxwell Myer Wintrobe, formerly associate professor at the Johns Hopkins University School of Medicine, Baltimore, has been appointed professor and head of the department of internal medicine.

*University of Pittsburgh  
School of Medicine*

Col. Albert S. Dabney, M.C., U. S. Army, assistant commandant of the Medical Field Service School at Carlisle Barracks, Pennsylvania, has been appointed assistant dean, effective October 1.

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*University of North Carolina  
School of Medicine*

Dr. John H. Ferguson, of the department of pharmacology of the University of Michigan Medical School, has been appointed professor and head of the department of physiology.

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*Bowman Gray  
School of Medicine*

Dr. E. O. Jeffries has joined the department of surgery in the capacity of neurosurgeon.



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## General News

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### *Third Annual Schering Award Competition*

The third nation-wide competition for the Schering Award is now open. Three major prizes of a total value of \$1,000.00 will be awarded to undergraduate medical students who submit the best critical dissertations on the subject "Hormones and Cancer." As in previous years, the judges for the Schering Award will include outstanding American investigators in the fields of endocrinology, medicine and chemistry.

The Schering Award was established by the Schering Corporation in 1941, for the purpose of encouraging a wider interest in current endocrinological developments among undergraduate medical students. Participation is limited to undergraduate medical students in the United States and Canada. All manuscripts must be submitted no later than January 15, 1944. Communications should be addressed to "The Interne," 7 East 42nd Street, New York 17, N. Y.

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### *Investigation of Medical Education and Service in South Carolina*

The investigation of medical education and medical service in South Carolina started on August 25 in the senate chamber when a specially selected joint committee met to begin the taking of testimony. The committee is composed of Senators James E. Leppard, Chesterfield, chairman, O. T. Wallace, Charleston, and C. S. McCall, Marlboro; Representatives J. Claude Fort, Cherokee, and James B. Morrison, Georgetown; and from the medical association Dr. Walter R. Mead, Florence, and Dr. William R. Wallace, Chester. Morning and afternoon sessions were held. It is expected that another meeting will be held in Charleston and probably a third in Columbia, after which a report will be made to the general assembly in January. The committee, under a resolution

creating it, is to ascertain the cause of "present acute shortage of medical doctors and medical services in this state" and recommend "such measures as shall be necessary to procure and maintain an adequate supply and proper distribution of physicians and surgeons" and also to determine whether the state medical college in Charleston "should be enlarged so as to provide a sufficient supply of medical doctors to serve the needs of the state" and also whether a medical college should be established at the University of South Carolina. The committee is also to determine "whether it is necessary or desirable that the state should subsidize the cost" of educating medical students and whether it is necessary "for the state to provide in whole or in part public medical service." Among those appearing before the committee at this first meeting were Dr. Robert Wilson, dean of the medical college of the state, Dr. Kenneth M. Lynch, chairman of the state board of health, and Dr. Carl B. Epps of Sumter.

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### *Dr. William Beaumont Foundation*

At the first meeting of the Dr. William Beaumont Memorial Foundation in Prairie du Chien, September 18, Dr. William D. Stovall, Madison, director of the state laboratory of hygiene, was elected chairman of the board of directors and M. J. Dyrud, Prairie du Chien, was chosen president. The foundation was incorporated in May and its purpose is to "perpetuate the name and memory of Dr. Beaumont and his memorable experiments in the physiology of digestion, and to recognize noteworthy contributions made by other physicians and surgeons of the United States." Organization of the foundation was planned and carried through by the Crawford County Medical Society and the local Kiwanis club. Other officers include Dr.



Olaf E. Satter, vice president, Dr. Thomas F. Farrell, treasurer, and J. Alvin Dru'yor, secretary, all of Prairie du Chien. Other members of the board of directors are Mayor F. W. Clanton, F. A. Otto and Paul H. Schmidt, all of Prairie du Chien. Walter J. Meek, Ph.D., acting dean of the University of Wisconsin Medical School, Madison, was appointed chairman of the advisory board by the directors at their meeting after the membership meeting. Other appointments made by the board of directors were Cal Peters, curator; Dr. Peter L. Scanlan, Dr. Henry H. Kleinpell, Dr. John J. Kane, Dr. Charles A. Armstrong and Dr. Emil H. Lechtenberg, medical advisers to the curator, and Mr. Dyrud, general manager. The first meeting of the new foundation was held in the hospital section of the second Fort Crawford, built in 1829, in which Dr. Beaumont served as post surgeon under Col. Zachary Taylor, then commandant at the fort.

#### *University of Florida Graduate School*

On August 14 the first official meeting of the faculty of the department of medicine of the Graduate School of the University of Florida was held in Jacksonville with Dr. Turner Z. Cason, Jacksonville, director of the department, presiding. The tentative program for developing the department calls for the division of the department into eleven sections:

Section on Roentgenology, Dr. Joshua C. Dickinson, Tampa; Section on Internal Medicine, Dr. William C. Blake, Tampa; Section on Public Health, Dr. Henry Hanson, Jacksonville; Section on Pediatrics, Dr. Thomas E. Buckman, Jacksonville; Section on Ophthalmology, Dr. Shaler A. Richardson, Jacksonville; Section on Urology, Dr. Robert B. McIver, Jacksonville; Section on Obstetrics, Dr. Samuel R. Norris, Jacksonville; Section on Gynecology, Dr. Charles J. Collins, Orlando; Section on Otolaryngology, Dr. H. Marshall Taylor, Jacksonville; Section on Pathology, Dr. Lucien

Y. Dyrenforth, Jacksonville; Section on Surgery, Dr. Edward Jelks, Jacksonville.

In each section a staff of instructors who have been certified by their specialty boards will serve with the chairman. The work of the department will be carried on by the University of Florida with the cooperation of the state medical association and the state board of health with Dr. Cason in general charge as director. At the meeting Dr. Cason requested each section chairman to prepare a syllabus, appoint instructors and suggest the number of hours required and the time of year best suited to offer graduate work. The new department of medicine, which will conduct graduate courses and promote research in medicine and surgery, is the outgrowth of the annual graduate short course for doctors of medicine inaugurated about ten years ago.

#### *Johnson & Johnson Research Foundation*

Dr. Ross G. Harrison, Chairman of the National Research Council, has announced the acceptance by the National Academy of Science—National Research Council—of a grant from the Johnson & Johnson Research Foundation in the amount of \$75,000. The grant was made to enable the Division of Medical Sciences of the Council, under the chairmanship of Dr. Lewis H. Weed, to gather medical information pertaining to the war effort and to disseminate summaries. The program of the Division of Medical Sciences of the National Research Council contemplates coverage of the various medical reports and bulletins which emanate from civilian and military activities throughout the world. The enterprise should fill a much needed gap in the war effort in medicine; for one of the greatest difficulties encountered in medicine today lies in providing adequate up-to-date information to the medical officers of the armed services both in this country and abroad and in making the experience of war medicine available as far as possible to civilian physicians.

The Johnson & Johnson Research

Foundation appropriation to the National Research Council becomes immediately available; in accordance with present plans it will be utilized in the period up to June 30, 1945. A central office will be established in Washington and reporters will be appointed in various foreign countries, so that a staff of special observers abroad will be working under the direction of the central office. The various theatres of operation present medical problems in which climate, season of year, distribution of insects, distribution of disease, all play different roles. Reports from widely separated parts of the world will be of greatest medical importance and it is hoped that with the combined effort much of significance will be achieved.

Many of the observations and laboratory studies cannot be released today because of the classified information contained in them—information of military importance. Such materials will be carefully held until release may be made. Every effort will be made, however, to issue bulletins containing current advances in medical practice and medical research which are not military secrets and which should be made available to the medical profession at the earliest possible date. This collection will form basic

source material for later summaries of medical experience in the present world war. Not only data from the armed forces will be included but also material from other Federal agencies and from civilian enterprises.

The informational service will be under the direction of the Committee on Information of the Division of Medical Sciences which includes Dr. Morris Fishbein, Chairman, Dr. John F. Fulton, Dr. Richard M. Hewitt and Dr. Robert N. Nye, with liaison officers appointed by the three Surgeons General.

The Johnson & Johnson Research Foundation was established January 1, 1940, as a non-profit philanthropic organization by Johnson & Johnson, New Brunswick, N. J., with the express purpose of supporting research and development of products to serve the medical profession. It has made appropriations for both fundamental and developmental investigations and is currently sponsoring about one hundred projects located in twenty-eight universities. The fields of medical interest which have largely been supported are pharmacology (including antiseptics), allergy, physiological studies in pediatrics and human fertility.

## Book News

### *Reaction to Injury:*

*Pathology for Students of Disease  
Based on the Functional and Morphological  
Responses of Tissues to Injurious Agents*

By Wiley D. Forbus, M.D., Professor of Pathology, Duke University. The Williams & Wilkins Company, Baltimore. 1943. Price, \$9.00.

This is a different book and a very timely one. Although it is a text on pathology, it gives pathology its proper place in the scheme of things medical, the study of cell and tissue reactions to various types of injuries. At the same time, it takes pathology out of the rather airtight compartment of a second year subject and spreads it, with good and proper emphasis, over three years and ties it up tightly with clinical studies—which is right and proper and most important. "General" and "special" pathology do not appear in the picture at all, which is also proper. Cells, tissues, reactions producing certain effects are studied as a composite known as "disease." It is essentially a study of disease written for students of disease—which the author distinguishes from students of medicine. He stresses the why and wherefore of disease processes, discourages departmentalization and the division of anything into "clinical" and "pathological." The book, in its concept, is intended to stimulate thinking, learning, careful reading and observation on the part of the student. As a matter of fact, if he uses this book, he must proceed accordingly. It is a long step forward toward the unification of the medical curriculum, the study of man as a whole and his reactions to injuries either from without or from within. Clinical clerks will appreciate and profit from this book even more than will sophomores. For both, however, it will be an entrance into a new concept of disease and its study. The book is elaborately illustrated, mostly from original material of the author. Bibliographies are appended to each chapter. That may be helpful to the student—if he has time to consult references. At any rate, they are there for him to use if he wishes.

♦ ♦

### *Nervousness, Indigestion and Pain*

By Walter C. Alvarez, M.D., Professor of Medicine, University of Minnesota (Mayo Foundation). Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, New York. 1943. Price, \$5.

This is a "different" sort of a book—one which deals more with sick, unhappy persons than with their diseases, more with

symptoms and their meaning than with disease entities, more with the handling of patients than with the giving of medicines, and more with the puzzling, poorly understood and poorly described abdominal discomforts and indigestions than with the well known organic diseases such as ulcer, cholecystitis and cancer. It is a different book also in that it deals not only with those diseases which arise in the digestive tract but with those many disturbances of nervous, arthritic or endocrine origin which the gastroenterologist has to struggle with every day.

Dr. Alvarez takes the reader with him into his consulting room and shows him how he takes a history so that it often gives him the diagnosis, how he sizes up the patient, gains his confidence, and plans the treatment.

Full of just those "tricks" of diagnosis and treatment which are acquired only by long experience, every doctor will value this helpful new book. Enlivened with pointed medical anecdotes, it is as enjoyable as it is instructive.

♦ ♦

### *Biochemistry for Medical Students*

By William V. Thorpe, Ph. D., (Lond.) Reader in Chemical Physiology, University of Birmingham. Ed. 3. The Williams & Wilkins Company, Baltimore. 1943. Price, \$4.50.

Contains new material; text has been rearranged; a short chapter on chemistry of respiration has been added. The book is written specially for medical students, giving what he may want to know and omitting what he is never likely to require. Very good.

♦ ♦

### *Microscopic Technique in Biology and Medicine*

By E. V. Cowdry, Professor of Anatomy, Washington University. The Williams & Wilkins Company, Baltimore. 1943. Price, \$4.00.

This book will be a source of great delight for the laboratory worker. The material is arranged alphabetically which makes all information quickly accessible. The names of structures, men, drugs, dyes, apparatus—everything is easily found and there are references to bibliography, many of them. New and ingenious.

*The Compleat Pediatrician*

By Wilburt C. Davison, M.D., Professor of Pediatrics, Duke University School of Medicine. Ed. 4. Printed by Seeman Printery for Duke University Press, Durham, N. C. 1943. Price, \$3.75.

Presenting in a small compass an amazing mass of information for ready reference, emphasizing signs and symptoms as clues rather than on description; a ready reminder, of convenient size; unique in conception and most useful in practice; condensed but up to date in every particular. Disease and the prevention of disease in children are discussed fully; laboratory procedures, nutrition, feeding and diets, general treatment and nursing, growth, development and child care, history taking and physical examination, drugs and prescriptions—all are discussed ably. The index is really a fine workable index. It does help to find what is wanted, which cannot be said of most indices. Medical students, as well as practitioners, will get much help from this splendid work. The author must be congratulated on his accomplishment—which, he says, is only a hobby, a relaxation from arduous labors.

\* \*

*Textbook of Surgical Treatment:  
Including Operative Surgery*

Edited by C. F. W. Illingworth, M.D., Regius Professor of Surgery, University of Glasgow. Compiled by Eighteen Contributors. Williams & Wilkins Company, Baltimore. 1943. Price, \$9.00.

This book is intended mainly for senior students and those undergoing training in surgery. For this reason particular emphasis is laid on the treatment of common diseases and the details of minor and emergency operations. Major operations and highly specialized procedures are dealt with in general terms. Special attention is devoted to the choice of methods of treatment, to the indications for and against operation, to the selection of the particular type of operation and to the dangers and complications that may arise. A special chapter is devoted to radiotherapy. The editor and his aids are members of the Glasgow and Edinburgh medical schools and are well qualified to give voice to surgical thought.

\* \*

*Synopsis of Tropical Medicine*

By Sir Philip Manson-Bahr. Williams & Wilkins Company, Baltimore. 1943. Price, \$2.50.

Since tropical diseases are being emphasized because of the war, it is convenient to have this little volume for easy reference. It is a good refresher. It should make

a strong appeal to medical students who are hearing more about tropical diseases today than ever before.

\* \*

*Fractures and Dislocations*

By Edwin O. Geckler, M.D. Williams & Wilkins Company, Baltimore. 1943. Price, \$4.50.

Concise, clear and to the point. Well illustrated by more than 300 drawings, roentgenograms and photographs. This being the most important part of surgery for the medical student, the book supplies what the student needs most—a good, sound text on fractures and dislocations.

\* \*

*Clinical Diagnosis by  
Laboratory Methods*

By John A. Kolmer, M.D., Professor of Medicine, Temple University School of Medicine. D. Appleton-Century Company, New York. 1943. Price, \$8.00.

The author considers his subject entirely from the clinical side rather than from the laboratory side. He discusses the clinical interpretations of laboratory examinations and their practical applications in the diagnosis of disease. The book is divided into three parts: Part I: The Clinical Interpretation of Laboratory Examinations; Part II: The Practical Application of Laboratory Examinations in Clinical Diagnosis; Part III: Technic of Laboratory Examinations. Less than 100 illustrations, well selected, should prove helpful. The 137 diagnostic summaries, in chart form, are a distinctive feature of the work and add much to its value. Many bibliographic references are given. The book is large and all inclusive. It should appeal to students.

\* \*

*A Hundred Years of Medicine*

By C. D. Haagensen, M.D., and Wyndham E. B. Lloyd, M.D. Sheridan House, New York. 1943. Price, \$3.75.

This book tells the story of the medical discoveries of the past century in simple terms. It describes the work of Virchow, Semmelweis, Koch, Pasteur, Halstead, Cushing, Lister, Ehrlich, Roentgen, Banting, Minot and Domagk. Much is included about the lives of these men for they were often men of interesting character. The main facts of modern medical history are presented in sufficient detail to interest the reader. Forty-two illustrations, many of them new, are included and a very comprehensive bibliography for him who has a lively interest in medical history. A brief review of medicine up to a hundred years ago is the prologue to the story of the book which is most fascinating.

*Introduction to Physiological and  
Pathological Chemistry*

By L. Earle Arnow, M.D., Director of Biochemical Research, Medical Research Division Sharp & Dohme, Inc.; with an introduction by Katherine J. Densford, R.N., Director of the School of Nursing, University of Minnesota. Ed. 2. The C. V. Mosby Company, St. Louis. 1943. Price, \$3.75.

Written primarily for nurses, medical students will find the book useful in making easier the approach to biochemistry and relating it closely with medicine.

• •

*A Surgeon's World:  
An Autobiography*

By Max Thorek, M.D. J. B. Lippincott Company, Philadelphia. 1943. Price, \$3.75.

As the title indicates, this is the author's story of his life told in six parts.

• •

*Personal and Community Health*

By C. E. Turner, Dr. P.H., Professor of Public Health in the Massachusetts Institute of Technology. Ed. 7. The C. V. Mosby Company, St. Louis. 1943. Price, \$3.50.

A book that has survived six editions must have value. This book is planned for various college level groups and is based on a long teaching experience with students in the general college and students in professional schools of whose faculty the author was long a member. It is for the medical student a good introducer to the more elaborate courses in public health and preventive medicine although it covers much ground. Personal health and hygiene are stressed. Appendix A—of some length—considers the control of communicable diseases in detail; Appendix B discusses disinfection and disinfectants. Illustrations, charts and tables aid in elucidating the text. Medical students will do well to read this book before they go on to more detailed consideration of problems of public health and preventive medicine. The physician will find it a good refresher.

## DISEASES OF THE SKIN

By OLIVER S. ORMSBY, M.D.  
Rush Professor of Dermatology  
University of Illinois

and HAMILTON MONTGOMERY, M.D.  
Associate Professor of Dermatology and  
Syphilology, Mayo Foundation  
Rochester, Minnesota

Sixth edition, thoroughly revised.  
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The latest edition of this standard work reflects the important findings in the entire field of dermatology which have resulted from the most recent investigative work. Twenty-two diseases not previously described and one hundred and thirty-three engravings have been added. The work is of value to the student, physician and pathologist.

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